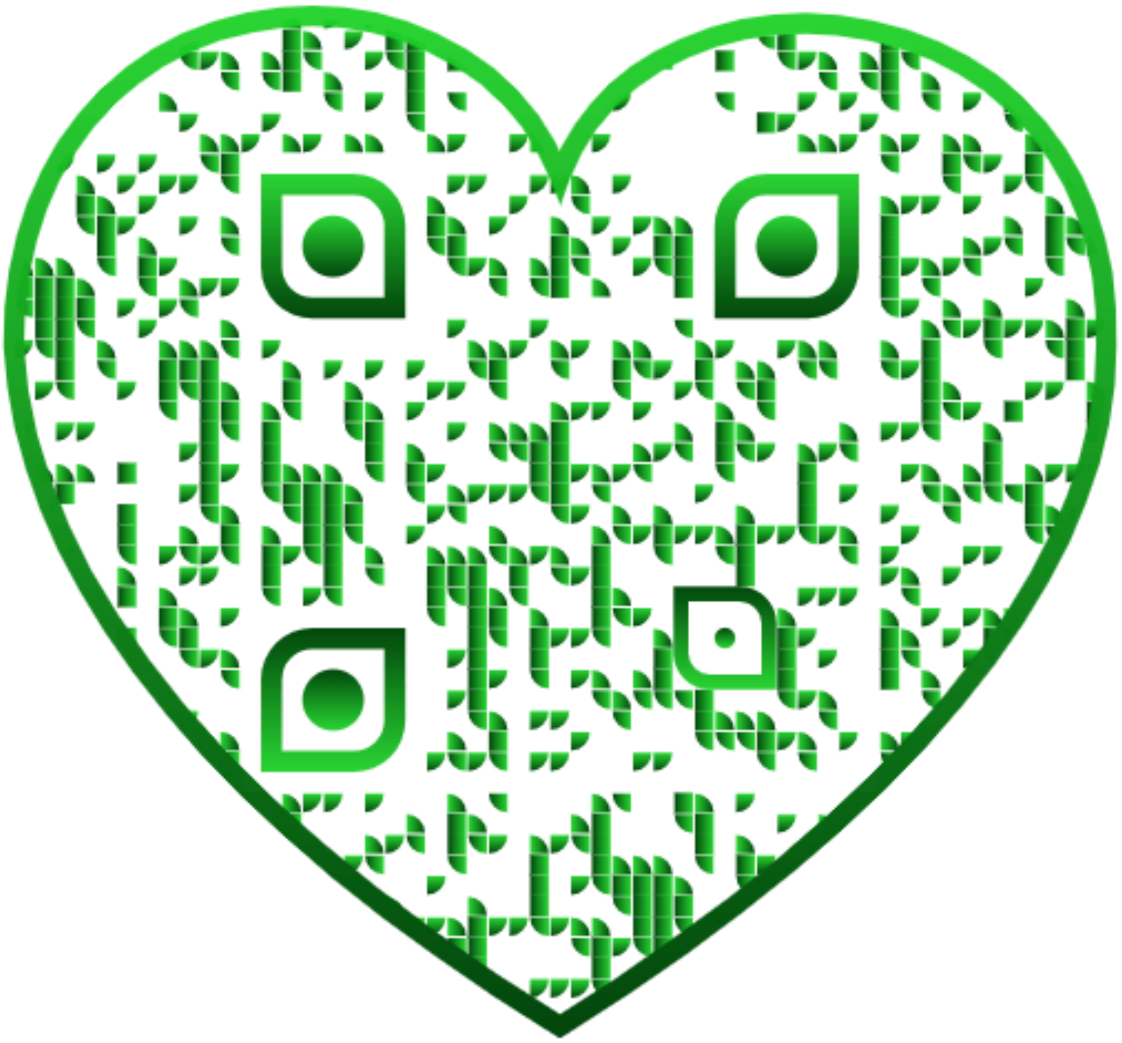
The Hermetic Code in DNA

The Sacred Principles in the Ordering of the Universe

Michael Hayes

Foreword by Colin Wilson, author of *Atlantis and the Kingdom of the Neanderthals*



The

Hermetic Code *in* DNA

The Sacred Principles in the Ordering of the Universe

Michael Hayes

Inner Traditions
Rochester, Vermont

Acknowledgments I would like to thank Colin Wilson for all the help and encouragement he has given me in the writing of this book, and for always finding time in his busy schedule to answer my calls. A kinder, wiser man I have yet to meet. I am duty bound also to thank posthumously three other wise men who have helped shape my world: George Gurdjieff, Pyotr Ouspensky, and Rodney Collin. Without their input, I should never have dreamt of such wonderful things.

A special thanks to Kay Hyman, whose invaluable editorial contribution has been generously provided simply for the love of it.

And lastly, but most of all, thanks to my wife, Ali, for reasons too numerous to mention.

Contents

Foreword by *Colin Wilson*

Acknowledgments

A Note on Measurements

Introduction

1 The Sacred Constant: The “Jewel in the Crown”

2 A Different Way of Seeing

3 Music over Matter

4 The Electron and the Holy Ghost

5 Further Light

6 Live Music

7 Extraterrestrial DNA

8 Interstellar Genes and the Galactic Double Helix

9 The Hermetic Universe of Ancient Times

10 The Hierarchy of Dimensions

11 The Fate of the Universe

12 Inner Octaves

13 The Holographic Principle

14 Quantum Psychology: The “Nonlocal” Brain

15 QP2: The Universal Paradigm

16 The Shapeshifters

17 “Al-Chem”—the Egyptian Way

Notes
Bibliography
About the Author
About Inner Traditions
Copyright

Foreword

I suspect that the name of Michael Hayes is going to be remembered together with those of Stephen Hawking and Watson and Crick as a thinker who has made a revolutionary contribution to our vision of modern science.

Some time in 1995 I received a copy of a book called *The Infinite Harmony*, and subtitled *Musical Structures in Science and Theology*, published by the respectable firm of Weidenfeld & Nicolson. Since I was overworked, trying to complete a book to a deadline, it took some time before I got around to reading it. My book was about ancient Egypt and was called *From Atlantis to the Sphinx;* its starting point was the theory of John Anthony West that the Sphinx may be thousands of years older than anyone had supposed. And the amount of reading required was enormous.

One evening I was relaxing with a glass of wine when I noticed *The Infinite Harmony* in a pile of books beside my chair. I picked it up idly, glanced down the table of contents, and saw that the second chapter is devoted to ancient Egypt. Naturally, I turned to it immediately, and was soon reading with excitement and absorption. I quickly learned something I had not come across before: that in the antechamber to the King's Chamber in the Great Pyramid, there is a square granite relief whose area is exactly equal to the area of a circle whose diameter happens to be precisely the same length as the antechamber floor. What is more, when this length is multiplied by *pi*, the result is precisely the length of the solar year: 365.2412 pyramid inches.

I was fascinated. It had long been clear to me that the ancients attached some mystical significance to numbers and that the sophistication of their knowledge was often greater than ours. Hayes reinforced my feeling that we are dealing with a very ancient knowledge system whose secret has been lost.

I was so excited that I looked around to see if I could locate the letter that had accompanied the book. It had vanished. The inscription in the book showed that it had been lying around my sitting room for months. And my wife had made a note of the sender's address, which was in Moseley, Birmingham. I rang Directory Enquiries and asked them if they had a telephone number for Michael

Hayes; they had. And although it was now after ten in the evening, I rang him. A girl answered the phone, and went off to get her father. A few moments later, I was speaking to Michael Hayes, apologizing for keeping him waiting so long for a reply, and telling him that I found his book enormously exciting.

I asked him some questions about himself, and about how he had become interested in the subject. He told me that it had started in his hippie days, when he was living in Mashad, in Iran, and was in the great mosque of the Imam Reza, impressed by the sheer number of worshippers, and by their devoutness. It was obvious that to them, religion was a living reality, just as it had been to the thousands of worshippers who had brought stones for the building of Chartres cathedral in the twelfth century. And during his travels in Iran, India, Pakistan, and Afghanistan, Michael Hayes had felt exactly the same thing—that their religions had a living source. He experienced an overpowering sense of being on the brink of learning some enormous secret.

Back in England, he had decided that it was time he learned something about the genetic code, and the mysterious letters DNA. He enrolled at a course at Leicester University. And there he took an important step closer to the secret. It proved to be numerical.

The spiral-shaped DNA molecule involves four chemical bases called adenine, guanine, cytosine, and thymine. And these four can combine together in sixty-four different ways to form triplet units called RNA codons.

The number 64 struck a chord. Then he remembered what it was: that the Chinese “Book of Changes,” the I Ching, has sixty-four “hexagrams,” each made up of two different lines. Any reader who has ever tried throwing down three coins to consult the I Ching will recall that a preponderance of tails result in a broken line,

while three heads form an unbroken line:

The first symbolizes the Chinese concept of “yin,” the feminine, the yielding, while the second is “yang,” the forceful and masculine. The coins are thrown six times, and the six lines are laid on one another in a kind of six-decker sandwich.

Those who use Richard Wilhelm’s translation, with the introduction by Jung, will recall that the next step is to turn to the chart at the back of the book, which contains sixty-four numbers in a grid of squares, whose sides are eight units long. You then look up your “top” trigram along the horizontal edge, and your “lower” trigram along the vertical edge, and the square where the two trigrams meet is the number of the hexagram you are looking for.

In the early stage of his quest, Mike Hayes (as he prefers to be known) had studied the I Ching, and wondered idly why the number of hexagrams is eight times eight, not seven times seven or nine times nine. And now, with the coincidence of the DNA code and the hexagrams of the I Ching, he found himself wondering if this number 64 is some basic code of life.

When he learned that there were eight trigrams hidden in DNA, he began to feel that this was more than an odd coincidence. . . .

All this Mike sketched out for me during that phone conversation. And when it was over, I had decided that reading the whole book was a major priority.

What I learned in *The Infinite Harmony* was that this coincidence was just the beginning of a whole series of related discoveries. For example, the number 22 plays a basic part in the DNA code. Proteins are formed by twenty amino acids, but with two codons forming start and stop signals, making twenty-two in all. And 22 also plays an important part in music, being the number of notes in three octaves on the piano. The followers of the Greek philosopher Pythagoras regarded 22 as a sacred number, and also 3.

Previously, studying the Russian mage Gurdjieff, Mike had also been introduced to something called the law of three. Positive and negative, good and evil, light and darkness, merely counterbalance one another, but a third force is necessary to combine them—just as the two sides of a zipper are made to interlock with the fastener in the middle, or two gases will only combine in the presence of a catalyst that is itself unaffected.

Studying the world's major religions, Mike was struck by how often the numbers 22, 3, and 7 occur. The number *pi*, the relation of a diameter of a circle to its circumference, is 22 divided by 7. So now he began to look in detail at the world's major religions—ancient Egyptian, Judaism, Zoroastrianism, Islam, Jainism, Buddhism, Confucianism, and Christianity. With increasing excitement, he realized that his numerical discoveries constituted a code that connected them all. The same code turned up in alchemy, which led him to label it the Hermetic Code, after Hermes Trismegistus, the Greek god who is the patron of alchemists, and whose best-known dictum is "As above, so below." And so *The Infinite Harmony* came to be written.

His chances of publishing such a strange and abstruse book seemed minimal, yet its importance was recognized by an editor at Weidenfeld & Nicolson, and it appeared in 1994. But there the marvelous wave of coincidence and synchronicity that had carried him so far seemed to run out of strength. The book was not widely recognized, and opened no further opportunities. And just as Mike was beginning to experience a sense of anticlimax, I rang up, and said I intended to write about it in *From Atlantis to the Sphinx*.

I did just that, and the book came out in 1996, and went into several editions —partly because the whole subject of ancient civilizations had become popular as a result of Graham Hancock's remarkable bestseller *Fingerprints of the Gods*, which argued that civilization may be thousands of years older than archaeologists believe.

By that time, I had met Mike Hayes. He had spent a part of his childhood in Penzance, in Cornwall, and accepted eagerly when I suggested that he should take a few days off writing his second book, and come and renew his acquaintance with Cornwall. We spent days driving around, talking endlessly, and he told me many things about himself and his development that I shall not repeat here, since they are in the remarkable and absorbing introduction to this book.

Mike proved to be a slightly built, fair-haired man who was in his mid-forties at the time I met him. And during the few days he spent in Cornwall (his wife, Ali, had to stay behind to look after their three daughters), I got the same odd feeling I had experienced while reading *The Infinite Harmony*: that here was one of those people that fate seems to throw down into the world to make some important discovery.

This has always seemed to me true of all scientists and inventors. One of my favorite television programs is Adam Hart Davis's *Local Heroes*, in which he cycles from place to place, and comes upon dozens— in fact hundreds—of remarkable men and women who have left something behind them, perhaps something as straightforward but essential as the lawnmower or hovercraft, perhaps some world-changing knowledge like relativity or quantum theory.

Mike Hayes, I soon came to feel, is one of these.

And why do I think he is so important? Because if the genetic code and Mike's Hermetic Code—these numbers that recur constantly throughout all world religions—are identical, then there is a fundamental connection between molecular biology and religion. And why is that important? Because ever since Gregor Mendel created genetics in the nineteenth century, it has been regarded as a science of the mechanism of evolution. Darwin suggested that evolution progresses through a mechanical process of the survival of the fittest, but he was not sure about the nature of the mechanism that creates species. Mendel's discoveries pointed to the genes as the answer.

But Darwinism plus Mendelism was even more mechanical than Darwinism alone. At least Darwin believed that his colleague Lamarck— and his grandfather Erasmus—might be partly correct in believing that the will of the individual influences evolutionary changes. But the neo-Darwinists who accepted Mendel's discoveries as the mechanism of evolution felt that it

explained everything. Evolution was now a totally mechanical process—like the erosion of a landscape by geological forces—for the will of the individual cannot influence his genes. And the most influential of modern geneticists, like Richard Dawkins, are rigid materialists.

I personally have been attacking this view for the past half century, and have pointed out anomalies that cannot be explained in terms of mechanical evolution—for example, how a colony of little insects called the flattid bug can crawl onto a dead twig and then shape themselves into the likeness of a living flower—a flower that does not even exist in nature. This cannot be explained by "survival of the fittest." It seems to involve some "group mind" operating at an unconscious level.

Now, in showing the connection between the Hermetic Code and the genetic code, Mike Hayes has pointed to the fact that the essence of evolution can also be found in religion, and therefore in the realm of the evolution of consciousness.

I found his introductory remarks about the insights he obtained through LSD exciting partly because of his comment, "I clearly perceived that (everything solid) is composed, literally, of sparkling, vibrant 'particles' of light," a view that is of central importance to the argument of the book, and that echoes the vision of so many mystics.

Now, I had already come upon this notion in a book called *Essay on the Origin of Thought* (1974) by a remarkable young philosopher named Jurij Moskvitin. Lying one day in the sunlight with his eyes half closed, he became aware of a kind of moving mosaic pattern through his eyelashes. It seemed to be made of tiny light fragments, and as he slowly developed the ability to focus them, he recognized patterns like those in religious art, "art and ornamentation created by civilizations dominated by mystical initiation and experience." These forms, he finally decided, were made up of "dancing sparks," a little like the tiny lines in the work of the painter Signac. These sparks, which he decided looked a little like tadpoles, make up our whole visual field, on which we impose shapes. He compares it to the way that, in a Dutch painting, a wineglass examined closely proves to be merely a few strokes of yellow paint. Moskvitin is suggesting that the external world our eyes reveal to us is simply a limited version of a larger inner world. I was reminded of Moskvitin's thesis by Mike Hayes's theory of light—on which he expands greatly in this book.

His insights were also close to those of a remarkable anthropologist called Jeremy Narby, who studied among the Ashaninca Indians of Peru, and became convinced that their extraordinary knowledge of the medicinal properties of forest plants was obtained through a visionary process involving the drug

ayahuasca.

For example, the drug curare, used on poison darts, is made from a combination of plants, and the first stage is to boil them for three days, while staying clear of the deadly vapors. The final product kills monkeys without poisoning their meat, and also causes them to relax their grip so they fall from the tree to the ground, instead of clinging to the tree in a death spasm.

But there are about eighty thousand species of forest plants. How did the Indians stumble on curare without poisoning themselves first, or wasting their lives in endless experiment?

The same questions arise with regard to ayahuasca. It is made up of two plants, one of which contains a hormone secreted in the human brain, a hallucinogen that is rendered harmless by a stomach enzyme. In order to prevent it being rendered harmless (and useless as a drug), it has to be mixed with a substance from a creeper. Then it induces visions.

How, Narby wondered, did the Indians discover anything so complex? Surely not by trial and error—trying millions of possible combinations. The shaman's answer was that they learned it from drugs, which "told" them the answer.

Narby learned a great deal from another anthropologist, Michael Harner, who had also experimented with drugs among the Indians. And Harner had declared that his visions emanated from giant reptile creatures "like DNA" that resided at the lowest depth of his brain.

It struck Narby that DNA looks like two intertwined serpents (as Mike Hayes also points out). The molecule also looks like a spiral ladder, and shamans the world over talk about ascending a ladder to higher realms of the spirit.

Narby himself tried ayahuasca, and reached the same conclusions as Harner. The drug introduced him to Harner's "serpents":

> Suddenly I found myself surrounded by two gigantic boa constrictures that seemed fifty feet long. I was terrified. . . . In the middle of these hazy thoughts, the snakes start talking to me without words. They explain that I am merely a human being. I feel my mind crack, and in the fissures, I see the bottomless arrogance of my presuppositions. It is profoundly true that I am just a human being, and, most of the time, I have the impression of understanding everything, whereas here I find myself in a more powerful reality that I do not understand at all and that, in my arrogance, I did not even suspect existed.

He began to feel that language itself was inadequate, and that words would no longer stick to images.

But after this alarming beginning, things began to improve as he realized that

the Indians know their way around in this bizarre reality, and that the most apparently absurd things they had told him were true. And somehow, the Indians seemed to be obtaining their information directly from DNA, a concept that seems less odd when we remember Mike Hayes's discovery of the similarity between the genetic code and the I Ching.

Later in *The Cosmic Serpent*, Narby writes, "It seemed that no one had noticed the possible links between the 'myths' of 'primitive peoples' and molecular biology." And he goes on to make the important comment (in view of Mike Hayes's emphasis on music), "According to the shamans of the entire world, one establishes communication with the spirits via music."

Narby dares to ask, "Is there a goal to life? Do we exist for a reason? I believe so, and I think that the combination of shamanism and biology gives undisputed answers to these questions."

Obviously, Jeremy Narby and Mike Hayes have been pursuing parallel courses, and arrived at very similar conclusions.

A few words about the present book.

In many ways, it is easier to absorb than *The Infinite Harmony*. To begin with, Hayes discusses in his introduction the pertinent biographical facts that enable the reader to watch the discovery and unfolding of his ideas. This introduction says everything that is in *The Infinite Harmony*, and makes it all beautifully clear. He then plunges into the questions that are directly related to Graham Hancock's thesis in *Fingerprints of the Gods*, Robert Bauval's in *The Orion Mystery*, and my own in *From Atlantis to the Sphinx*. Even I, who have now devoted about ten years to these matters, was fascinated by his treatment of them. He also points out that there is evidence that Neanderthal man knew about the Hermetic Code seventy-five thousand years ago.

I shall not try to summarize the rest of the book except to say that it is remarkable for the confidence he shows in handling an immense range of subjects, from modern physics to the paranormal, from evolutionary biology to musical theory, from yoga to superconductivity. I was familiar with some of this material, but much of it was unknown to me, and the use he makes of it is strikingly his own.

The performance is often so dazzling, reminding a reader of a juggler who can keep ten balls in the air at the same time, that the reader might easily be misled into thinking that this is no more than a brilliant piece of eclectic exposition. But make no mistake: what Mike Hayes has discovered could be as important as the original discovery of DNA. Like Jurij Moskvitin and Jeremy Narby, he has created a new paradigm—that is, he is looking at our familiar universe from a new angle, and making us aware of magical possibilities.

COLIN WILSON

Colin Wilson is a prolific author and philosopher whose 1956 breakout work *The Outsider* helped popularize existentialism in Britain. Later, when existentialism fell out of fashion, he became a symbol of the British version of the beat generation as a member of the "Angry Young Men," in which he was the head of a small group of existentialist philosophers. Beyond his early political influence, his more than 108 titles convey his enormous literary scope—ranging *from philosophy, crime, occult, literary criticism, and short fiction—and include From Atlantis to the Sphinx, Atlantis and the Kingdom of the Neanderthals*, and his autobiography, *Dreaming to Some Purpose*. He is also coauthor, with Rand Flem-Ath, of *The Atlantis Blueprint*.

A Note on Measurements

When taken from other sources, units of measure used in the book retain the measurement system used in the original text. So temperatures may be in Kelvin, Celsius, or Fahrenheit, and physical measurements may be metric or imperial, and so on.

Introduction

This book is the product of a personal journey of discovery, a trip that began when I was about seven or eight years old. This, significantly, was when I first chanced to think about that ultimate question in life: death. I remember feeling greatly disturbed that I was unable to comprehend this truly awesome prospect. What made matters worse was the fact that the adults around me were not only equally clueless in this respect; it seemed to me that they didn't even want to think about it. But then this was England in the mid-fifties, and the grown-ups had just survived a horrendous global war. For many of them the unspeakable facts of death must have been an all-too-prevalent and uncomfortable reality, so it is not surprising that I was usually given short shrift whenever I asked one of the available big people to show me the netherworld on a world map.

As it turned out, and for reasons I cannot explain, I have been drawn to ponder this question many times over many years. So, if nothing else, the subject has been a recurrent reminder to me of the transient, apparently futile nature of individual existence. But it has also, I think, been a primary factor in determining one of my major motivations in life—to try to understand the meaning and purpose of our being, to establish some kind of meaningful perspective from which to view our true position in the cosmic scheme of things. Basically, I simply want to know what is going on around me. Don't you?

So, what is this thing death, this future happening looming over the horizon of our lives like some conceptual black hole? Can the process be elucidated, defined in terms we can understand? My answer is a cautious yes, and I shall explain why in due course.

As for death's equally mystifying opposite, the counterbalance we loosely call life, this too cries out to be understood. Evolutionists think they have cracked it by charting the increasingly complex interactive development, over four thousand million years, of the RNA and DNA molecules—which is fine, as far as it goes—but where does the evolution of consciousness fit into the Darwinian picture? Indeed, can it fit? That is, is it possible to explain the thought processes of the modern hominid in terms of the current theory of evolution? Actually I don't personally know of any evolutionists out there who are aware of this fact, but the answer, once again, is yes. As I see it, the systematic, biomolecular process involved in the evolution of DNA is a perfect model of the working of the healthy human mind.

So what I currently have to offer is an ambitious, but serious, proposition, which is that life and death are in a certain and unique way entirely comprehensible.

As I said, what follows is the record of a personal journey, but this is also, by its very nature, an account of the entire evolutionary journey of the conscious hominid. What began for me in the fifties, with what might be called a chance thought, has been happening to thinkers for many thousands of years. So, in effect, I have merely tuned in to an already existing stream of ideas, a channel of intelligent information whose list of presenters and past contributors reads like a roll call of the immortals—scientists, philosophers, saints, mythmakers, saviors.

We will therefore have to go back in time to trace the origin of this "thought" of mine: back to ancient Egypt and Greece, and to China, India, Palestine, Arabia, and the Americas. One of the principal reasons for looking back is that most of these ancient cultures developed a religion, or a mythology, to explain the mystery of life and death. Indeed, this almost wholly preoccupied the earliest peoples. And, significantly, although different cultures over the millennia have expressed their ideas in apparently diverse ways and idioms, they all agree on one fundamental point: that there is an existence after death. As it happens, the originators of all the major belief systems also concurred on one other fundamental point in respect of life.

But first things first. My own personal account is the warp of this metaphysical design, so we must for the time being stick to the minor plot; the greater weft will be woven in chapter by chapter.

In the early sixties, I dutifully went to grammar school, obtained mediocre GCE passes, and subsequently took up a position selling advertising space for a local newspaper. Disillusionment soon crept in. A large workplace can be a quagmire of trivia and petty jealousies and, to avoid being sucked in, I became a corporate drifter, aimlessly careerhopping from one meaningless job to another.

Meanwhile my alter ego was heading off on a completely different trail. By the time of the late sixties, he was already blowing in the wind, unwittingly heading for a second memorable jolt. This happened when, quite by chance, I came across a certain psychedelic agent called purple haze.

Purple haze was the name given to a particularly pure batch of LSD that hit the streets of my town in the winter of 1968, one tiny tablet of which happened to come my way. It cost me thirty bob and about eight earth hours, but such was its impact upon me that it changed my whole life, for, quite suddenly, after this one, mind-blowing experience, I became absolutely convinced of the existence of other dimensions beyond my own tiny, subjective conceptual domain. This newly found awareness made life appear much more interesting. But more

perplexing.

More trips inevitably followed, always, without exception, profoundly illuminating, producing in me such powerful waves of emotion that I felt I could very easily be swept out to some mystic sea and be gone forever. Whether these glimpses into other worlds were real or imaginary was a question I never bothered to ask, but my perceptions were so vivid and incomparably impressive that they made my molelike working life seem like a form of penal servitude.

It has been more than twenty years since I last took a trip, and I have no intention of taking another in the foreseeable future. Neither do I recommend the use of psychedelics to anyone. I am merely reporting here. My own "transgressions" were directed largely by circumstance. This thing—this drug—was new and radical, and virtually everyone in my peer group was experimenting with it. Obviously, in another time and another place, with different peers, I might have taken an alternative route to the present.

So, to get to the point, which is to explain why my psychedelic experiences should be of such importance to my story. It has all to do with the impressions I had then. To be sure, very little remained of the total experience after each of these illicit forays into inner space, but certain key impressions did remain indelibly imprinted on my mind.

The first was that everything solid or material—houses, trees, rocks, mountains, people—were all possessed with a kind of inner light of their own. That is, I clearly perceived that these things, or objects, were composed, literally, of sparkling, vibrant, "particles" of light.

It is entirely possible, of course, that this is not so—that "things" are not composed of light at all—and that the impression was simply a drug-induced false consciousness. However, when the hallucination, or whatever it is, appears to be infinitely more striking and meaningful than anything so-called reality can throw up, then I think I have good reason to pay heed to it—which, indeed, I have done ever since. And, in fact, although I was unaware of this at the time, I was later to discover that my impression was corroborated by two quite different and independent sources.

In the first instance, Einstein had already shown that light quanta, i.e., photons, were "particles." Second, the idea that matter is simply one particular form of light has been common currency among the holy men of the East for centuries.

The second major impression (or hallucination) had to do with time—or, rather, the absence of it. I could never explain it, not even to myself, but in these altered states time seemed to stand still. I remember that the word *eternal* came to mind more than once when I was attempting to describe this condition.

Interestingly, this particular notion—that there are “timeless” realms, or dimensions, of existence—is not at all unique. In fact, it is part and parcel of practically every major religion and mystical belief system known. If you think of familiar scriptural concepts like heaven, eternity, time without end, the realm of Him that liveth for ever and ever, and so on, all these so-called religious notions seem to suggest that legions of contemplatives have in the past had glimpses or feelings similar to mine. Further, as with the earlier impression that matter is made up of vibrating particles of light, this second idea of a “timeless” form of reality has also been quite clearly expressed in independent sources. For example, through the development of modern quantum theory, it has been discovered that, in the “world” of the subatomic particle, time as we know it (or as we think we know it) has no place: it is statistically meaningless.

For me, this idea of an “eternal” dimension of existence was especially appealing, because it seemed to hint at a possible way out of the time-laden quicksand in which we hapless mortals become immersed. That is, if there was any substance at all to my extratemporal experiences, then maybe we—you, me, everyone—need never truly die.

I have always been an avid reader, but over the years my taste changed with my circumstances. So, by the end of the sixties, works of fiction, classic and popular, were gradually replaced by books on science and what my elder brother Tony laughingly called “all that esoteric stuff.” He was right, of course. The hippies were on the move, traveling in droves to the East, reading books by and about countless Indian holy men, Sufis, Western occultists, and Lobsang Rampa and Erich von Däniken to boot. I readily joined in the party, reading all kinds of spiritual and philosophical fare. Much of it I found pretty ineffectual: hearsay, vague allusions, apocryphal stories, parables, and outright guesswork—but all in all I was temporarily hooked, greatly impressed by the vast numbers of mostly sincere writers from all walks of life attempting to understand the nature of consciousness. Of all intellectual pursuits, the exploration of the human mind seemed to me to be the most worthwhile. If we could reach journey’s end on this one, all other questions might fall neatly into place, side by side with their answers.

The trouble was, although a lot of the books circulating in the seventies contained many interesting ideas, after reading them I still had no idea what was really going on in people’s heads. So many writers claimed to have all the answers, but when it came down to the nittygritty, everything seemed to end with a question mark. I had no inkling then that a major clue was in the offing, but I was soon to find a man who had some important answers. What is more, he wasn’t entirely unique.

Usually with my wife, Ali, I made several trips to the East during the seventies. Often we would stop off and visit my brother, who at that time was living in Mashad in northeastern Iran. Tony, who never stopped traveling throughout the whole of his abbreviated life, had at this stage in his journey married and converted to Islam.

This was in the days of the pro-Western Shah, and Iran had a booming economy, affording plenty of opportunity to anyone with an entrepreneurial flair. And yet, despite all this, the people remained deeply religious, especially in Mashad, one of Iran's holy cities, home of the great mosque of the much-venerated Islamic saint Imam Reza, the fourteenth imam in a direct line of high initiates that began with the Prophet Muhammad himself.

During these visits, I was always struck by the intense fervor and passion of Muslim worshippers there. Their tears were obviously very real, and their emotions seemed to be charged with a vitality of a kind seldom encountered in Christianity. To these people, prayer was a genuine, wholehearted celebration, a loud, proud, public affirmation of their devotion to Allah and His Prophet.

I must admit that my interest in Islam, although it impressed me greatly, never passed beyond an observational level. What intrigued me most about it was the sheer emotional power that this metaphysical phenomenon had so effectively harnessed. There was a self-evident force at work here—not a force that could be empirically measured according to established scientific criteria, but a real source of power nonetheless, one so energetic, in fact, that it could somehow cause millions of people from different ethnic backgrounds all over the world to simultaneously move, speak, and act in concert. Perhaps the most curious thing about this remarkably well-coordinated mass movement of human beings is that it was all set in motion by one man.

When I try to picture Muhammad in my mind, I see a person of true genius, the light of Allah sparkling in his eyes, a clear vision of the future march of Islam stretching out before him. Here, quite evidently, was a man who knew exactly what he was doing, an individual who understood the workings of the human mind like few others. How else could he have created such a powerful living movement? Luck? Accident? I really don't think so. There is a weird kind of magic afoot here, and it comes to us today in the form of a tangible supernatural force—the mysterious power of Islam. Now, this force exists, it cannot be denied, and I am saying that the person who purposefully created it was—and indeed still is—without doubt a giant among men. Irrefutable evidence to support this view is provided daily, weekly, continuously for all to see, when millions of Muslims all over the world emulate their leader by taking time to align themselves with this great spiritual source. Similar individuals have

appeared elsewhere in history, and we shall be meeting some of them in this book, but in my view the Prophet was the last.

After my initial brush with Islam I soon started to recognize certain similarities with the other great religions. In particular, they had all apparently been set in motion by single individuals, then, incredibly, had subsequently inspired the voluntary participation, over thousands of years, of millions, billions of people.

So eventually it became clear to me that there are very real forces profoundly affecting the human brain at work within these religious and philosophical movements. Think of Christianity, Judaism, Buddhism, Hinduism, Zoroastrianism, Islam, and so on. Nowhere in the entire "civilized" world is it possible to avoid some kind of contact with one or other of these apparently incomprehensible influences. They emanate from every church, mosque, synagogue, and temple.

Now, recognizing the existence of such forces is one thing, but understanding how and why they operate so effectively is quite another. I pondered over this unfathomable mystery for years, reasoning that the founders of the major religions must have had one fundamental factor in common, which enabled each of them dramatically to affect the lives of whole races of people—but what this was, I had not the least idea.

A BREAKTHROUGH

Then in France, some time in the mid-seventies, a fellow traveler called John Mullins told me about a book he had read recently which had impressed him very much. I asked my wife to send me a copy from England. It was a propitious move. The book in question, *In Search of the Miraculous*, was an account by the Russian writer Pyotr Demianovitch Ouspensky, of his meetings with George Gurdjieff, a Greek-Armenian teacher of "esoteric wisdom" whom he met in Moscow in 1915.

Ostensibly the book is a record of talks given by Gurdjieff to his pupils over a period of about eight years. I had never heard of Gurdjieff or his principal pupil prior to this, but after reading Ouspensky's brilliant piece of reportage from cover to cover, stopping only to eat, drink, and catnap, I can truthfully say that encountering the teachings of this man was one of the most important stages in my entire voyage of discovery. I could write a book on this book, but that would be a digression—and in any case I would simply be diluting what is easily obtainable from any good bookshop. The main thrust of Gurdjieff's teaching,

however, I will briefly mention here, because it is relevant to this part of my tale.

Basically he taught that the universe and everything within it is made up of vibrations, resonating, interactive "signals," which permeate through all kinds, aspects, and densities of matter. This almost immediately struck a familiar chord in me, because it reminded me of my earlier impression that all matter is made up of sparkling (vibrating) particles of light. What really made me sit up, however, was Gurdjieff's explanation of how these vibrations move through matter, time, and space.

Gurdjieff said that all processes, all "vibrations," both in the world and in man, are governed by two fundamental laws—laws that were understood in the remotest antiquity.

The first is the law of three, which says that every action, every phenomenon in the universe, is the direct result of the mutual interaction of three forces: active, passive, and neutral. If you ever do something so basic as change a three-pin plug, or use a catalyst in a chemical experiment involving two other compounds, or watch a referee do his job, or examine the structure of an atom, you will recognize immediately the action of these three forces. They are fundamental, everywhere; quite literally, universal. If you have only two forces —active and passive—the result is either deadlock or destruction, but if a third, reconciliatory force is introduced, anything and everything can happen. Gurdjieff said that this concept was the basis of the Holy Trinity of Christian tradition. This in turn implies, of course, that Christianity itself was formulated by people of a scientific turn of mind, people who understood the principle of the three interacting forces, the forces of creation. And, of course, the Trinity, in one way or another, is a fundamental component of virtually every major religion, a fact that suggests that "science" itself—the science of creation—is indeed rooted in the distant past. Scholars may argue that the Trinity was in fact denied by certain monotheistic religions such as Judaism or Islam, which assert emphatically that there is only one God. But consider this: the most significant act of creation in the whole of Islamic tradition was the revelation to Muhammad of "God's words," which were subsequently compiled as the book known as the Koran. We thus have two participants, Allah and His Prophet. We should note, however, that Muhammad is said to have received his revelations not directly from God Himself, but through an intermediary, the archangel Gabriel—enter the third force. This exact principle is described in the first verse of the first chapter of Genesis: "In the beginning God created the heaven and the earth." You can't get much clearer than that. Creation is the result of three forces. This is the first law.

The second ancient law is the law of octaves. This says that all vibrations

moving through matter, and through man, develop—that is, ascend, descend, grow stronger, weaker, and so forth—precisely as a musical octave develops, that is, in proportional steps of seven or eight. Now, this development, apparently, does not proceed uniformly, in a smooth ascension or descension, but erratically, with certain regular “glitches” in the line of motion. Just like a musical octave, in fact.

For the benefit of those unfamiliar with the structure of the octave, or the major musical scale, the notes Do, re, mi, fa, so, la, ti, Do are each separated by a series of intervals or tones, five of which are whole, and two of which are only half-tones, like so:

or, as illustrated by the keys of a piano:

The half-tones—between the notes mi–fa and ti–Do—are the glitches just mentioned. Said Gurdjieff, “The seven-tone scale is the formula of a cosmic law which was worked out by ancient schools and applied to music.”[1]

Exactly how ancient these schools were is never specified, but Gurdjieff in his own writings suggests that the Pythagoreans, usually credited as being the originators of practical musical theory, had actually rediscovered a long-lost science.

During his talks, Gurdjieff gives Ouspensky many examples in nature demonstrating the action of the forces described by the two fundamental laws. These forces, for example, dictate the structure of white light, the seven colors of the spectrum, and the sevenfold symmetries of the periodic table of chemical elements. He also describes the physical structure of the universe in musical terms, even including in his unique worldview the biological and psychological composition of the human being. All of these phenomena, Gurdjieff said, are essentially musically structured. His evidence, as presented to Ouspensky, was

for me extremely compelling, and I instinctively felt that here at last was a real nugget of spiritual knowledge, a genuine, 24-carat kernel of truth. And I was right, as we shall see.

Of course, knowledge is one thing, but understanding how best to use it is quite another. This is what made Gurdjieff unique among all the people whose ideas I had previously encountered, because he didn't simply present original and interesting knowledge, he applied it in an entirely practical and comprehensible way.

I must try to keep things simple at this stage, as my preliminary story is not yet finished. All one needs to know here is that the practical aspect of this knowledge—the core of which is musical theory—is based on a systematic application of these "musical" rules as something like a code of personal conduct. The theory is that, by doing this, by introducing musical rhythms and elements into our lives in an orderly and disciplined way, it is possible for us to evolve, to become more and more conscious (i.e., harmonious) at a much faster rate than is normally envisaged by evolutionists. We can call this the principle of "transcendental evolution," which holds that a harmonious individual is like a fully evolved octave and is capable, through the final "note" Do at the top of the given scale, of striking a single new note, or impulse, into a greater scale above. This greater scale, or dimension, the ancients called heaven. Darwinists take note: what is being implied here is that there are certain limitations to current evolutionary theory, that it is, at best, incomplete.

In between life's periodic distractions, I studied Gurdjieff's ideas for several years, on and off. I read everything by and about him that I could find. He apparently drew his ideas from a number of ancient traditions, as referred to in Ouspensky's book—Egyptian, Christian, Buddhist, Dervish, Hindu, and so on. Of course, these were, broadly speaking, the very same religious movements that had intrigued me for years, which I had surmised were sources of strange metaphysical power that could quite literally move legions of the faithful.

There was an obvious and important link here, but for some time its real significance escaped me.

In the early eighties life slowed down. We had two young children by then and, as there were inevitably a number of conspicuous gaps in my CV, finding a regular and amenable occupation proved difficult. These were days of high unemployment, and the corporate drifter found himself up against stiffer opposition than he had expected. In the end, after several halfhearted attempts to reenter the professional workplace, he decided to go back to school, taking exploratory extramural courses in numerous and often tedious and uninspiring subjects. There was, however, one short course—a module dealing with the

biomolecular world, with DNA and the genetic code—that ultimately turned out to be exactly what I had been looking for.

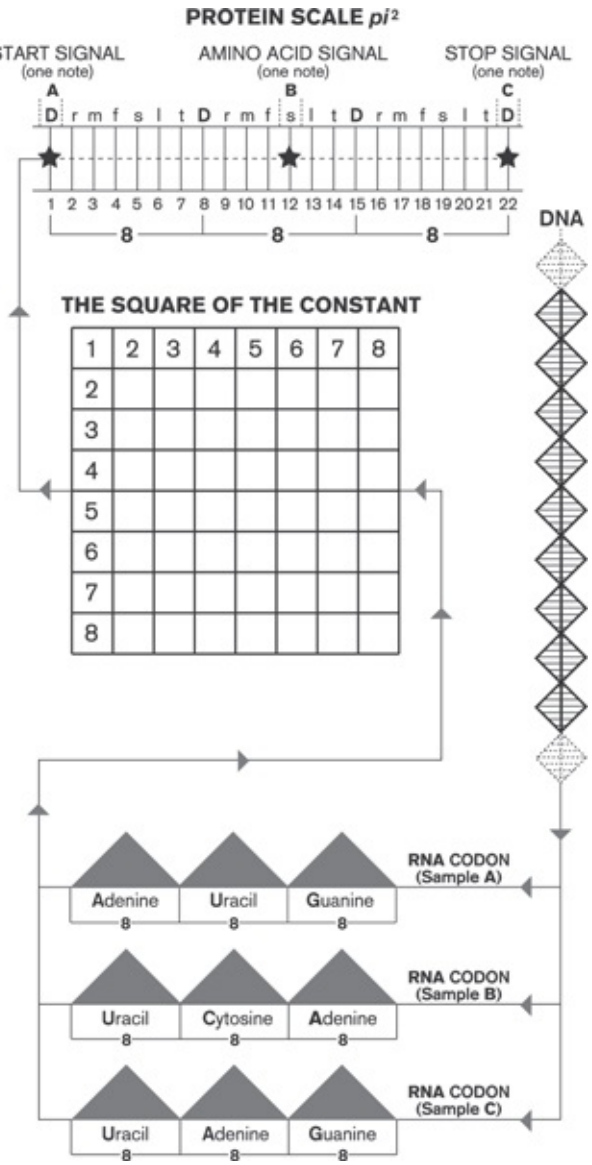
This was in the summer of 1984. I had been reading a great deal at this time, both textbook stuff and books of my own choosing. One week, genetics or astronomy, perhaps, or a droning essay on Karl Popper; another week, John Michell, Colin Wilson, or Idris Shah, or possibly a couple of chapters of Gurdjieff's monumental epic *Beelzebub's Tales to His Grandson*. This multilayered tome is over a thousand pages long and no easy read, with sentences the length of paragraphs, paragraphs pages long, and dozens of obscure new words invented by the author—for the express purpose, one suspects, of making reading it an even more difficult task. Gurdjieff advised his followers to read it three times (presumably in accordance with the law of three). The fact that I undertook this daunting task may say something about me that I wouldn't care to hear, but I completed it, nevertheless, in several stages, over a period of about five years.

I need not comment on the book itself. As with Ouspensky's, I could write a lengthy treatise on it—or try to—and even then would possibly succeed in conveying only a small fraction of its intended meaning. The point I want to make here is that Gurdjieff's ground-breaking ideas were well to the fore in my mind. In fact, practically all of the thoughts and ideas I have mentioned so far were jiggling around in my head, like ephemeral, dancing genes: life . . . death . . . light . . . timelessness . . . matter . . . vibrations . . . religion . . . force . . . Gurdjieff . . . music.

It was virtually all there, like the scattered pieces of a jigsaw, but the overall picture still eluded me.

Now let's return to the genetic code. Probably most of you will at least have heard of this chemical arrangement, used by the DNA in the cells of your body to manufacture amino acids, the building blocks of all organic life.

In order to give myself a kind of visual aid, an image of the code in action, I had drawn up a diagram incorporating the key numbers of the biochemical components involved in the process. These were 4, 3, 64, and 22. That is, there are four kinds of chemical bases. It takes three of them to make what is known as a triplet codon, an amino acid template, of which there are exactly sixty-four variations. Each of these codons correspond to one or another of twenty-two more complex components, namely, the twenty amino acids and the two coded instructions for starting and stopping the process of synthesis. In my diagram, the number 64, the number of tripletcodon combinations ($4 \times 4 \times 4$), was represented by a square grid, eight divisions across and eight down, like a chessboard.



It struck me immediately that there was a curious kind of symmetry involved with these particular number combinations, one that was entirely familiar to me and that I had seen many times before. I realized, in fact, that the whole diagram echoed the format of the famous Chinese work known as the I Ching (Yi King), whose sixty-four basic texts are each identified with a six-line symbol called a hexagram.

The I Ching, the so-called Book of Changes, was one of the more popular works circulating among “New-agers” in the sixties and seventies, and I had browsed through it several times. It was intended for use as an oracle: you pose a question, toss three coins, and note the way they fall. A preponderance of heads gives an unbroken line—“yang,” positive; tails a broken line—“yin,” negative. There is an older method of consultation using a clutch of forty-nine yarrow

stalks, but the principle is the same. Repeat the action six times and you will have called up one of the hexagrams. The accompanying text supplies your answer. Although I was never drawn to actually consult the I Ching, I had always been intrigued by its structure.

As I said earlier, the key numbers of my genetic diagram were 4, 3, 64, and 22.

Let's begin with the number 4, the number of fundamental chemical bases in the genetic code (adenine, thymine, guanine, and cytosine) upon which the whole process of amino-acid synthesis depends. The I Ching, I discovered, embodies exactly the same principle. The sixty-four hexagrams are actually constructed from four, basic, two-line symbols known as the Hsiang. These in turn were derived from the two fundamental lines, one broken and one unbroken, known respectively as yin and yang.

Next, the number 3. The genetic code, as was evident, obeyed the law of three forces, which is why only triplet codons are evident in the process of creation. The three forces are initially represented in the Book of Changes by the two original yin and yang lines, and a third factor called the Great Extreme: that is yin (negative, female), yang (positive, male) and neutral, the third, invisible or "mystical" ingredient, the tao. This greater trinity is fundamental to the whole system, but the number 3 also occurs in a way that corresponds exactly with the genetic code, because each of the hexagrams is described as being composed of two "trigrams," two three-line signals.

We now come to the number 64. As we have noted, the I Ching is composed of sixty-four hexagrams. At first glance it seems as if the genetic code deviates from this pattern, with its sixty-four triplet units. However, it should be noted that the genetic code functions as a dynamic system, and as such should be viewed as an ongoing, evolutionary process, in which every part is connected both with the simpler processes below and also with the more complex components above. Thus we can see that there is, in fact, another side to the codon template, the amino acid itself, which must also, by its very nature, be tripart in structure. So we have one triplet codon and one amino acid—a biochemical "hexagram." Incidentally, tripletcodon templates originate inside the DNA molecule, as copies of segments of its internal structure; this means, of course, that DNA itself is also composed of sixty-four biochemical hexagrams.

By this time, having recognized so many similarities between the IChing and the genetic code, I was convinced that I was on to something of profound importance, and my emotional state reflected this: I was highly charged. No way, I thought, could the identical features of these two apparently disparate systems be the product of mere coincidence, for they were not only identical in

structure; it seemed that they each had a common purpose, which was to facilitate the process of evolution. Just think about this for a moment: the genetic code is used to create a greater organic structure; the I Ching, the Book of Changes, is supposedly used to create a greater, more enlightened being. The principle is exactly the same.

With a greatly increased respect for it, I returned to the I Ching several times —not to read it or to consult it, but to concentrate on its structure. I felt that its real secrets must lie in the symbolism expressed in its format and that the accompanying texts were simply an embellishment, merely repeating, in longhand, what the hexagrams were already telling me.

Now these hexagrams, as I said earlier, just like the biochemical hexagrams of the genetic code, each consist of two trigrams, two three-line symbols, one above, one below. The trigrams, eight in number, were derived from the four Hsiang, by successively placing over each of them the two original broken and unbroken lines. When these same two lines are placed over the eight trigrams, the result is sixteen figures of four lines. Repeat the process once again and you get thirty-two figures of five lines, and a final similar movement produces the sixty-four hexagrams.

Unlike the four-and five-line figures, the eight trigrams, known as the kwa, are given particular prominence in the system. I mused over these for a long time, juggling with their numbers. Eight threes. Three eights. Twenty-four. I needed twenty-two. Close, but not close enough. Certainly the number 8 was an integral part of the overall symmetry, being the square root of that magical 64; but why did the sum of the trigrams not conform to the twenty-two codon signals of the genetic code? Why twenty-four? Why eight?

It was an exhilarating moment when the light finally dawned and the answer, which came filtering through in the form of the tiniest of thoughts, exploded silently inside my head: “Heptaparaparshinokh.”

This peculiar word is one of Gurdjieff’s creations, and it is repeated many times in *Beelzebub’s Tales*. It means, quite simply, the law of octaves, the law of seven (sometimes expressed as the law of eight),[2] the law by which, he had said, everything proceeds. Everything? Including the genetic code and the I Ching?

So there it was; obviously the symmetry I had been looking at was musically based. It had to be. Here was my chessboard: eight divisions across, like an octave; eight divisions down, another octave; and sixty-four divisions across the grid, an octave squared.

I then remembered what Gurdjieff had written in *Beelzebub’s Tales* about the origins of musical theory. He said that the Greeks only rediscovered the science, and that its true origins were far more remote in time. No dates are given, but

what he had to say about its originators turned out to be extremely pertinent. Beelzebub informs us that, a very long time ago, there once lived two brothers—princes—in ancient China. These men were direct descendants of a high initiate who survived the cataclysm that destroyed ancient Atlantis, and it was from his teachings, passed down through the generations, that they learned of the law of octaves.

According to most commentators on ancient Chinese history, the creator of the trigrams was a legendary sage called Fu-hsi, thought to have lived in the third millennium BCE. King Wen of the Chou dynasty and his son, Tan, the Duke of Chou, added the texts much later, around 1140 BCE. Princes, kings, dukes . . . it all sounded very familiar.

In the same section of *Beelzebub's Tales* there is a detailed account of how these ancient men of genius verified for themselves the law of octaves (aided by experiments with light, prisms, and other, strange paraphernalia), and how, subsequently, this knowledge became lost. As I recalled how the I Ching was being so casually used simply as a pocket fortune-teller, I could see how true this was. These people never acknowledged the "music" inherent in the system. They "played" it without even knowing.

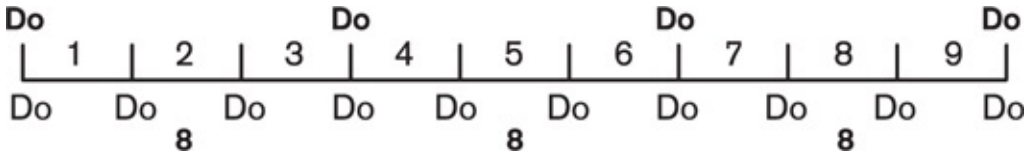
But now I felt that I had found it again, the secret of life, no less, the music of life, the music in you and in me, in the I Ching and the genetic code—and even, if Gurdjieff's claims hold true, in the cosmos itself.

And the number 22? It fits perfectly, as can be seen from the Pythagorean version of this ancient science. This number was one of the key numbers of their system, principally because of its musical aspect. It represented, in fact, three octaves of vibrations, or notes, three sets of eight—twenty-four components.

If you look at a twenty-two note scale in diagrammatic form, you will see that the first octave is made up of the eight familiar fundamental notes: Do, re, mi, fa, so, la, ti, Do. The eighth note, Do, however, is also simultaneously the first note of the second octave. So the two octaves overlap. Similarly, the eighth note of the second octave—again Do—is also the first note of the third; so these again overlap. In this way we see that the twenty-two divisions actually represent what is, in reality, a manifestation of twenty-four interrelated components—three individual octaves, or 8–8–8:

Now see what happens when we apply to the phenomenon described above

the first law of nature—the law of three forces—which tells us that each of the individual octaves are themselves tripart in structure, composed inwardly of three octaves each. This produces nine subordinate octaves:



Nine octaves, of course—from the first base note, Do, to the last— contain precisely sixty-four fundamental notes.

INTERIM

The story I have just related is only the beginning of the next, which even now is still unfolding. From that time onward, the summer of 1984, I spent several years exploring the mazelike annals of history. I automatically assumed that, if the Chinese and the Greeks were “tuned in” to this ancient science referred to so frequently by Gurdjieff, then it was probable that so were some of the other traditions and civilizations he mentioned. As it turned out, the evidence was overwhelming. Everywhere I looked I saw musical symbols beaming back at me: every known major religion and esoteric tradition in recorded history had embraced this science as a code of conduct, a harmonious mode of being. Here, in fact, was the missing common factor I had long felt existed, that magical ingredient that had given religious movements the power to affect the minds and hearts of billions in such a profound and extraordinary way. They were all unerringly based on the principle of harmony, a harmony that is echoed in, literally, every single cell of our bodies, in our DNA and in the genetic code. This is, therefore, a natural harmony, one that must naturally appeal to the deepest and innermost instincts of DNA’s ultimate creation: *Homo sapiens sapiens*.

Remember, DNA has been successfully using this method of evolution for billions of years. And now look what it is capable of. What began in the primeval soup with a single-celled organism has culminated in the creation of the conscious human being. That’s quite a leap, even if it did span four thousand million years.

And then, somewhere along the line—very recently by evolutionary standards—a group of extremely gifted individuals somehow came to realize that the best way forward was to get right back down to basics, to a musical mode of being

that was in harmony with the natural evolutionary processes of nature. This, surely, is Science with a capital “s”; it is the science, and in one way or another, it touches all others. And, as we shall see, in terms of the cumulative effect it has had upon the human race, and of the numbers of people who, over several thousand years, have been drawn to study its principles, it genuinely has no peer.

Now, these ancient men of genius, the first practitioners of the noble art of right living, subsequently disseminated their superior knowledge far and wide, across the entire globe, across millennia of time. The results of my researches into this extraordinary cultural phenomenon were finally published in 1994 in my first book, *The Infinite Harmony*.

The book begins with Old Kingdom Egypt, where the symbol of the octave first appeared in the form of their pantheon of eight gods, four male (yang) and four female (yin), said to have materialized on the fabled Island of Flame, the primary source of light. There were, in fact, three coexistent creation myths in Old Kingdom Egypt, and in all of them the octave format is paramount. Furthermore, as with virtually every major religion, Egyptian theology embraced a trinity of three major deities: Osiris, Isis, and Horus—an expression of the law of three, and the triple octave, composed of twenty-two notes. In fact, the mathematical convention *pi (p)*, expressed numerically as 22/7, is first and foremost a symbol of the triple octave, an encoded description of the law of octaves and the law of three forces. Orthodox historians will tell you that this formula wasn’t known in Old Kingdom Egypt, but this, as I have shown elsewhere, is an entirely false assumption. Indeed, the *pi* formula was not only known by these people, it was applied in a wholly practical way in respect of their day-to-day activities, and can be identified quite clearly in important administrative documents of the Old Kingdom.[3] This is quite apart from the evidence of the Great Pyramid itself, of course, the structural proportions of which accurately express the mathematical value of “classical” *pi*.

Incidentally, the *pi* relationship has also been discovered in the dimensions and proportions of the so-called Pyramid of the Sun at Teotihuacán in Mexico and, most recently, in the structures of Stonehenge in England and the “step pyramid” of Silbury Hill in southern England—details that suggest that the dissemination of the knowledge of this musical code was a genuine worldwide movement. Later on we can look at these relationships in more detail.

Subsequent sections of *The Infinite Harmony* are devoted to tracing the ongoing development of this musical influence, which flows like a river of pure thought through all the major belief systems in history, including Judaism, Zoroastrianism, Hinduism, Jainism, Buddhism, Confucianism, Christianity, Islam, and the alchemical schools of the Middle Ages. But then, as if this

extraordinarily potent stream of ideas flowing unhindered through earlier times were not a remarkable enough phenomenon, later in this book we shall note how the main tenets of this ancient teaching are now finding conceptual niches within the framework of the most advanced, systematic disciplines of our own age. We see this not only in the science of genetics, as just discussed, but also, as will become apparent, in particle physics and even astrophysics and cosmology.

The final chapter of my first book takes a detailed look at the musical structures of the biomolecular world, the realm of DNA and the genetic code, of amino acids and protein macromolecules.

Now this musical symmetry is real, it exists for all to see, and I don't believe I have contrived it in any way. I have merely looked at the facts as presented to me by experts in their respective fields, and then strung them together into what I see as a clearly recognizable musical pattern. Music is life; life is music: this is what I have learned from the facts. But of course the most important, and perhaps controversial, fact of all those arising from my research is that the musical symmetry dictating the evolution of the human gene pool was not only identified by ancient peoples, it was actively employed in their daily lives as a complete way of being, a "religion."

As the first recorded version of this archaic science first appeared in the Nile delta about five thousand years ago, I have called this musical symmetry the Hermetic Code, after Hermes Trismegistus, the Greek name for Thoth, the ancient Egyptian god of wisdom. This musical symmetry, as I have said, is precisely what the formula *pi* was designed to express; that is, the law of seven and the law of three—the triple octave, composed of twenty-two notes. And remember, the law of three tells us that each of the individual octaves so expressed is also tripart in structure: it is composed of three "inner" octaves, making nine octaves in total—exactly sixty-four fundamental notes, the square of the constant number, 8. This is the Hermetic Code, a universal formula that, as we shall find out, encompasses within it practically everything.

Having thus outlined my preliminary ideas, it is now time for us to embark on a greater journey of discovery—to new territories that I myself have yet to explore fully. Therefore much of the discussion that follows is to a large extent speculative in nature. We shall be dealing with "facts," of course, many of them astonishing—unbelievable even—but empirical data, however pertinent, can take us only so far. If we wish to go to realms existing beyond the bounds of "logical" thought—which is where this narrative is intended to take the reader—then we may have to temper our "knowledgeable" worldview with liberal measures of two of the most elusive of human faculties: instinct and intuition.

Instinct, as most people understand it, is a gut feeling, something in one's

bones. I am sure that we have all experienced this impulse in one way or another. Instinct may well be the primary cause of the emergence, over the past five millennia, of the inordinately powerful religious movements referred to earlier. These are long-held traditions, essentially rhythmic in form and method, and they are steadfastly adhered to by billions of ordinary people even now. These religions were founded, as I have explained, on the principles of musical symmetry, a symmetry that is so clearly evident in our DNA—literally in our bones. This could mean that the inclination to pray, for example, on every seventh day may, to a large extent, be the product of instinct. The "holy" Sabbath is the seventh day/note in an octave of time; the eighth "note"—Sunday in Christianity—is also the first day/note in the next "octave," the next week. Clearly this essentially "religious" division of time is no arbitrary invention. It is musically based. It has "rhythm," it has "soul"; it is a perfect example of real "live music," of the Hermetic Code in action.

Now intuition, on the other hand, is generally believed to operate from what we call our subconscious minds—a seemingly inexplicable, faster-than-light process of instantaneous recognition, flashing on and off in sparse, random bursts, conveniently providing us with sensible answers to "impossible" questions—and very often when we least expect them. If this has never happened to you, the idea might seem too vague or fanciful to be taken seriously. To dispel any doubt, consult the recognized experts, by which I mean trained and disciplined thinkers in virtually all fields of scientific investigation, past and present. I think you would be hard-pressed to find more than a handful of these individuals working today who would deny the existence of the intuitive process in the functioning of the questing human mind. Indeed, as we shall see later, modern scientific enquiry thrives on it.

To put all this simply, I am asking readers to open their minds and try to put aside all preconceptions about, well, almost everything. I realize, of course, that this is a tall order in these troubled and confused times, but the expansive, sometimes dizzying journey we are about to make requires that we be, as it were, "fleet of foot," relatively free from dogma and conceptually ready for anything. Having said all that, there is one crucial fact that we need bear in mind: that the Hermetic Code, the blueprint of all creation, has been known and understood as such since the dawn of our civilization.

As will become clear, the originators of this code discovered a spectacular sphere of existence, its expanse far beyond the confines of today's imagination. It stretches backward and forward in time, to infinity: through historical time (as far as it goes), through geological time, to the first stirrings of life on earth—and even further still, through cosmological time, to the origin of the universe itself,

the big bang. This remarkable worldview also encompasses all kinds of space: the inner space of the molecule, the atom and the subatomic particle, the space you and I perceive as “real” space, and the greater scales of space above us—the space of the planet, the solar system, the galaxy, the galactic supercluster. In truth, there is not a single phenomenon that is excluded from this all-encompassing cosmic plan, not even life, death, and the ultimate fate of our expanding universe.

Obviously, therefore, at certain stages in this investigation we shall have to look at some of the weird and wonderful notions of modern science—in particular, some of the key advances made in particle physics, astrophysics, genetics, and evolutionary theory. As a nonscientist, I trust that my interpretations of these complex, sometimes perplexing, ideas, will be clear enough for most readers to follow. In any event, they are necessary excursions, as a basic understanding of recent scientific thought will enable us to compare it with some of the theories of ancient times. There are a number of surprises in store, for today’s science appears in many ways to be simply reiterating what has gone before. This is not, of course, what scientists themselves want to hear, and, as a blatant trespasser, I would not expect them to give these ideas a warm reception.

So, where do we begin such an apparently impossible journey across an infinity of time frames and even dimensions? It is probably best to start with our feet firmly on the ground—on bedrock—in the land and time of Old Kingdom Egypt. The reason is clear: because the *pi* convention first emerged here, both in the architecture and in written form.

4

The Electron and the Holy Ghost

Around the beginning of the twentieth century, a new era of scientific enquiry began, and with it came some startling discoveries concerning the nature of matter. Previously, classical physicists had thought of the material universe as "deterministic," that it obeyed the established Newtonian/Einsteinian laws of motion and gravity, and that all material processes could in general be predicted with experimentally verifiable accuracy. But when physicists started probing atomic structures and their components, they discovered that they behaved in random, uncontrollable ways. In order to account for the peculiar dynamics of this strange underworld, scientists developed a new kind of physics, known today as quantum mechanics.

This new science is remarkable, because its practitioners not only believe in the paranormal, but can prove experimentally that it is a reality.

It all started with the investigation of subatomic particles, the smallest entities yet detected in the universe, the components of atoms, of light and of just about everything else. Originally it was thought that they were simply particle-like points in space, but recent discoveries have shown that the "particle" observed is only the detectable trace of a much more complex entity, whose overall presence reaches far and wide.

The first hint that this was so came from investigations into the nature of light itself, which is emitted by light sources in discrete "particle packets," or quanta, of electromagnetic energy called photons.

It was noted that a thin beam of light shone through a tiny pinhole in a partition with a dark screen or photographic plate behind it creates a small circle of light on the plate. If there are two holes in the partition close together, the image on the back-plate forms two circles of light overlapping. In the area where they do overlap, however, there are intermittent dark bands, where obviously no light is present. This has been attributed to a familiar wave-mechanics phenomenon known as interference, and it shows that the light is emerging from each pinhole as waves, sometimes overlapping and reinforcing one another, and sometimes canceling one another out—hence the dark, lightless bands. Actually,

the wavelike nature of light was first recognized as long ago as 1803 by the Englishman Thomas Young, using nothing more than a flame, a partition with two narrow slits and the dark backdrop upon which the pattern appeared.

Now, if single photons are fired one after another from a light gun over a given period of time, when the photographic plate is subsequently developed the interference pattern, logically, should not be there, because a single photon, presumably, cannot "interfere" with itself. Curiously, however, the interference pattern invariably does appear. The photon, it seems, can do whatever it chooses in its own surreal world. It can clap with one hand, creating interference patterns out of nothing as if in collaboration with some unseen, ghostly counterpart. Stranger still, when a photon detector is engaged to "see" what is going on when the photons emerge from the holes, the interference pattern disappears. Apparently we only have to "look" at a photon and it changes its nature completely.

Light, then, is a wavelike phenomenon. At least, that is what every-one thought until Einstein came along with a completely different interpretation of it. He formulated some equations to account for a phenomenon known as the "photoelectric effect," which is the effect of light shining on a metal surface, whereby electrons are emitted by the metal, causing an electric current to flow. His calculations proved, theoretically, that light—the photon—is a particle. This was later experimentally verified, and it was for this discovery, not the famous Theory of Relativity, that Einstein received his Nobel Prize.

Later discoveries made by physicists in the 1920s, notably those of the French aristocrat Louis de Broglie and the Austrian Erwin Schrödinger, showed that the electron, one of the fundamental components of all atoms, also has both particle and wave properties.

So what exactly is light, this ghostlike, photon entity? It is a particle with wavelike properties, a wave with particle-like properties, a mysterious, diminutive something that actually reacts when we "look" at it. If we leave it alone, it behaves like a wave, but as soon as we start to measure its movements, it flips over into particle mode. Classic abracadabra: now you "see" it, and when you do, it responds, "curls up," and changes its nature completely.

Another breakthrough experiment, again demonstrating that there is a great deal more to these wave/particles than first meets the eye, was the "twin particle" experiment conducted in 1982 by Alain Aspect and his team at the Institute of Optics in Paris.

Originally outlined by the theoretical physicist John Bell in 1964, the experiment was devised to test an apparent absurdity in the rules of quantum mechanics, first pointed out in 1935 by Einstein and two colleagues, Boris

Podolsky and Nathan Rosen. Basically it concerned one of the most controversial rules of quantum theory, which says that subatomic particles are interconnected in a way that classical physicists believed was impossible.

It was discovered that certain subatomic processes result in the creation of pairs of particles with identical properties. For example, when an electron and its antimatter opposite—a positron—come into contact and annihilate one another, they coalesce into two light quanta, two photons, which then zoom off in opposite directions at the maximum speed allowed by nature—the speed of light. Quantum physics states that, irrespective of how far apart these twin quanta travel, when they are measured they will always be seen to have the very same angles of polarization. That is, at the precise moment of measurement of one or another of these particles, its twin somehow "knows" which angle is to be agreed upon. Consequently there must be some sort of instantaneous communication going on between them.

Another curious feature of quantum mechanics arises from what is known as the "uncertainty principle," which was first expressed in 1927 by the German physicist Werner Heisenberg. According to this principle, wave/particles do not have a definite position in space and time, which means that their locations can only be expressed in terms of variable statistical probabilities collated over the course of many duplicate experiments. The "uncertainty" arises from the fact that it is not possible to measure simultaneously, with a high degree of accuracy, both the position and the momentum of a moving particle. Measuring one aspect, say the position, affects the momentum, and vice versa. In other words, the very act of observation changes the primary state of the wave/ particle. We noted this strange property earlier in the behavior of the photon, which, when targeted by a photon detector, switches over from wave to particle mode. The point is, in their virgin state, wave/particles do not have exact locations. Depending on how they are measured, they can manifest as a specific point, or as a fuzzy cloud of wavelike energy.

The Danish physicist Niels Bohr had a long-standing dispute with Einstein and his colleagues over the true nature of this so-called action at a distance between twin quanta. Einstein rejected the notion because it seemed to imply that there was a "superluminal" (faster than light) transference of information operating between the two coordinates, and the Theory of Special Relativity states absolutely that nothing on a material level of existence can travel faster than light. Bohr's answer to the problem, which is generally accepted by the majority of today's physicists, was that there was in fact no superluminal communication taking place, and that Einstein's error lay in viewing twin particles as being independent, self-contained phenomena. Bohr reasoned that if

subatomic quanta do not really exist until a probe of some kind causes them to "curl up" and manifest one of their measurable properties, then it was meaningless to consider them as separate things. Quantum systems in their natural, "unmeasured" state are indivisible from one another, and what we observe as being apparently unrelated subatomic events are in reality in a constant and immutable state of interconnectedness, even if they are on opposite sides of the universe.

When John Bell first thought up an experiment that could verify or disprove this idea, technology hadn't yet developed to a level at which it could produce instruments with an accuracy and sensitivity sufficient to carry it through. This is why it took until the early 1980s for Alain Aspect and his group finally to take up the challenge.

The experiment involved creating a stream of twin photons by heating calcium atoms with high-energy lasers, and then allowing them to fly off in opposite directions through lengths of pipe. At the end of each pipe were special filters that deflected each twin toward either one of two polarization detectors. The accuracy of the instrumentation ensured that all the crucial stages in the experiment could be performed in so brief an instant that there would be insufficient time for even a beam of light to traverse the space between the two particles. And, sure enough, as quantum theory had predicted mathematically, each photon was always able to manifest simultaneously exactly the same angle of polarization as its twin. Consequently, physicists now believe that the connection between two such related quanta must be "nonlocal," which means that no matter how far apart they are they always remain composite parts of a single, dynamic, interconnected system.

So we know that twin photons generated from a single impact event travel out from the source of their origin at the speed of light. Now this is significant because, according to the physicist, to an observer moving at such a velocity, time and space as we perceive them would both cease to exist. As speed is increased, they say, time slows down proportionately, eventually reaching a complete standstill at the speed of light. Simultaneously, space gradually contracts, eventually into nothing, no space whatsoever. What scientists are positing here, therefore, is a dimension of existence in which space and time do not exist. This is why the photon, itself perpetually existing in this strange, "spaceless" world in which time stands still, can instantaneously "transmit" information to a twin—because the impulses carrying the data have no "space" to pass through: they are already there, so to speak.

Clearly we are talking now of an alternative reality to the one we are all familiar with, quite literally another dimension, and it is a world as curious as

any found in fairy tales. In this alternative, quantum world, all entities, in moving at the speed of light, must effectively occupy, at one and the same instant, all possible locations along the line of passage. No matter how long the line as observed from a stationary frame of reference, the photon simultaneously exists everywhere along it. Like the Holy Ghost or the spirit of Muhammad or the Buddha, it is "omnipresent."

It is difficult to imagine what it would be like to see the universe through the "eyes" of the photon. There would be no distance between stars and galaxies, continents, you, or me; there would be no space, no ticking of clocks, and no aging. The moment a photon is created, say, inside a distant star, at that very same instant it could be entering the retina of an observer zillions of miles away. Its creation and annihilation is in fact one single-impact event, captured for all eternity in a frozen, timeless instant.

Similarly, if we ourselves could attain the speed of light and cross over into this other reality, theoretically we would be godlike. Just like the photon we could exist everywhere simultaneously, "visiting" remote constellations simply by focusing on them; and our conception and our death would be perceived as one and the same event, a single, permanent feature in the timeless, unfading fabric of creation. Presumably, once created, everything existing in such a dimension must exist literally forever; and what might be observed in the laboratory as, for example, the creation and annihilation of a humble photon is merely a cross-section of a much greater and more complex reality in which the observed event, which might have taken only a microsecond or two to unfold, continues to have a permanent existence independent of time.

According to Einstein, extraordinary changes would occur to a physical body if it could ever reach the light barrier. Its length, together with the length of the trajectory in space along which it were traveling, would become zero, and its mass would become infinite, expanding at right angles to the direction of motion into a vibrant sheet of wavelike energy of immeasurable size.

Now, in crossing the light barrier, any physical entity would, in effect, be transcending the fourth dimension, the line of time, and passing over to a quite different dimension existing beyond time. And if we refer to time as the fourth dimension (after the three dimensions of space: line, plane, solid), then the next in succession—what I called in my last book the plane of light—is the fifth. This is the "nonlocal" world of the photon quantum.

What is emerging here, in fact, is an overall cosmic picture of a succession of dimensions, from zero point to a line, a line to a plane, a plane to a solid, and subsequently the continuous existence of a solid along the line of time. These four different perspectives are easily recognizable, but the fifth in the ascending

scale, as physicists have discovered, needs more than a little intuition to identify. In a later chapter we shall discuss in more detail these different dimensions, as they provide a convenient way of fixing our position in the cosmic scheme of things.

The point to note here is that this fantastic fifth dimension is definitely there. We know this because physicists have proven it mathematically. This is highly significant, because it raises a most interesting question: which of the two dimensions is nearer to reality, the timeless, spaceless, nonlocal world of the photon, or the world we perceive, a world of sense objects, ticking clocks, night and day, birth and death? The answer, of course, at least as far as the physicist is concerned, is that the nonlocal world of fundamental quanta is the primary reality, and that the world perceived in time by our ordinary senses is at best incomplete. This is precisely what Einstein was referring to when he wrote in a letter to the relatives of a deceased colleague, "People like us, who believe in physics, know that the distinction between past, present and future is only a stubbornly persistent illusion."[1]

What is particularly interesting about this curious nonlocal dimension of the particle physicist is that it almost perfectly matches the worldview of many so-called primitive peoples, of the aboriginal shamans, of the writers of many of the world's great scriptures and, perhaps most significantly, of the Egyptian priesthood. Remember the Hopi, whose shamans perceive only an "eternal present" and whose ceremonial dance results in those involved experiencing the collapse of the whole universe into a single event. In a similar vein we have the Egyptians of the Old Kingdom and scriptural writers from every major culture, to whom the concepts of eternity (timelessness) and infinity (spacelessness) were common fare.

As I described earlier, the psychedelic experience can result in the same kind of impression, that is, of a world in which time seems to stand still. Speaking personally, my own "extratemporal" experiences were impressive in the extreme, and it is unlikely that I will ever forget those uplifting feelings that we human beings could live forever.

Possibly such perceptions are the result of what Colin Wilson sees as right-brain, intuitive thought processes—of the kind he believes to have been used by the possessors of ancient "lunar" knowledge, which was unified and enabled people to see things as a whole. The Hopi's concept of an eternal present seems to express just such a unified worldview, in which everything in the entire universe condenses into a conceptual singularity, multiplicity becomes unity, all becomes one.

Now let's return to another strange idea that has echoes in the present, one

that was first expounded at least as long ago as the time of the Greek philosophers Pythagoras and Thales. This is the notion that matter itself is "psychic," that it possesses some kind of awareness of its environment. Probably very few scholars have ever given any serious consideration to such a seemingly fanciful claim. It's a quaint idea, one might think, but we shouldn't take it to heart. And yet, curiously, some of the latest discoveries of modern science actually lend support to such a view.

We have already mentioned the peculiarly responsive behavior of the photon, which behaves like a wave when left unobserved and as a particle when targeted by a detector, and also the now proven reality of nonlocal (timeless, spaceless) interactivity between twin quanta.

In an attempt to explain the principle of nonlocality and the idea of a vast web of interconnectedness permeating the whole universe, the University of London physicist David Bohm posited the existence of what he called quantum potential. He saw this as a new kind of energy field that, like gravity, pervades the whole universe, but whose influence does not weaken with distance.

Bohm first recognized a possible indication of this quantum potential through his work on plasmas, gases comprising a high density of electrons and positive ions (atoms with a positive charge). He noticed that the electrons, once they were in plasma, began to act in concert, as if they were all part of a greater, interconnected whole. For example, if any impurities were present in the plasma, it would always realign itself and trap all foreign bodies in an exclusion zone—just as a living organism might encase poison in a boil. Bohm observed also a similar, orchestrated mass movement of electrons in metals and superconductors, with each one acting as if it "knew" what countless billions of others were about to do. According to Bohm, particles act in this way through the influence of the quantum potential, a subquantum force matrix that somehow coordinates the movement of the whole.

It appears that when plasmas are rejecting impure substances and regenerating themselves, they look very similar to swirling masses of well-organized protoplasm. This curious "organic" quality led Bohm to comment that he often had the impression that the electron sea was, in a sense, "alive." He possibly did not intend this to be taken too literally, that the electron mass was living in the same way as an amoeba, but the evident highly coordinated symmetries of the plasma convinced him that the electrons were responding to one of many "intelligent" orders implicit in the fabric of the universe. He believed that order exists in many different degrees, some forms being much more ordered than others, and that as a consequence the things we see as disordered at our ordinary levels of perception may in fact be perfectly ordered when viewed in a more

objective way.

To illustrate this point, imagine yourself as a microcosmic visitor in a living cell, observing amid a writhing sea of biomolecules—proteins, enzymes, amino acids, and the like—all busy exchanging energies, whizzing past you in a flurry of hyperactivity. What you would see might appear to be virtual chaos, a seething marketplace full of eager bargain-hunters, pushing, gathering in random groups, shouting, haggling. But, in fact, all this frenzied activity, appearing on the face of it to be an unending display of random physical actions, is totally governed by the hidden DNA of the cell, possibly one of the most organized and beautifully proportioned structures in the entire universe, and producing, as a direct result of the cell's activity, a greater organism of an infinitely higher order.

So these electron symmetries, which Bohm called plasmons, appear to be following hidden instructions encoded somewhere in the subquantum fabric of the universe. But even where we observe no apparent orchestrated activity, where masses of electrons seem to be acting randomly, we may simply be trying to view them on the wrong scale—rather like our microcosmic onlooker in the biochemical marketplace of the cell.

Bohm was ultimately to conclude that the ordinary world as seen through orthodox scientific experimentation is really an illusion, something like a holographic image, and that somewhere behind this lies a much deeper and more meaningful level of reality—the holographic "film," as it were, from which the image originates. This metaphor of the universe as a living hologram subsequently became the central theme of Bohm's investigations, which have been summarized by Michael Talbot in his book *The Holographic Universe*. We can take another look at the wider implications of this important concept later.

Bohm's views on consciousness in relation to matter are also interesting. He believed that consciousness itself is actually a subtle, highly rarefied form of matter and that forms of intelligence exist, in correspondingly different degrees, in all kinds of material substances. "The ability of form to be active," he said, "is the most characteristic feature of mind, and we have something that is mindlike already with the electron."[2]

As it happens, Gurdjieff and Ouspensky were saying much the same thing in the early part of the twentieth century, that everything, including all our finer thoughts and aspirations, has a material existence and could, theoretically, be weighed and measured. On the subject of matter as we know it, Gurdjieff had this to say: "In addition to its cosmic properties, every substance also possesses psychic properties, that is, a certain degree of intelligence."[3]

Do these observations seem at all familiar? They sound decidedly “Greek” to me. Bohm’s electrons, negatively charged wave/particles that orbit the nuclei of atoms at velocities approaching the speed of light, are what give matter its substance, its apparent solidity. And if electrons exhibit “the most characteristic feature of mind,” then this means that the Greeks were right all along and that all material things are endowed with “psychic” properties.

In fact, Bohm then took this highly mystical worldview a giant leap farther by suggesting that not only are “inanimate” objects like rocks and stones in some way alive and intelligent, but so too is all energy, all time, all space—everything. As we noted earlier, Sri Aurobindo expressed a similar view when he said that if there were a single point in the universe that were not conscious, the whole universe itself would be unconscious.

The principle of nonlocal interconnectedness is hereby taken to the absolute limit, where even so-called empty space is seen to be full of meaning, brimming with an infinite store of primordial intelligence, the underlying formative matrix for everything existing, including ourselves. Thus all the phenomena we observe in the physical universe are simply “ripples” on the surface of an unimaginably vast ocean of deeper meaning. This hidden world Bohm called the implicate or enfolded order, the subsurface dimension that gives rise to the phenomena we observe with our senses, in the explicate, unfolded order. So the manifestations of all forms are the product of endless enfoldings and unfoldings between these two very different but mutually interconnected dimensions.

In this way a wave/particle, like an electron, is described not as one thing, but as a nebulous stream of interchangeable energies enfolded throughout the whole of space. When it is measured by an investigator, what is observed is merely one property of the “greater electron,” which has simply responded to some probe or other by unfolding into the explicate order.

Obviously the ancient Greeks would have known nothing of the strange properties of the subatomic particle. Nevertheless, they still somehow managed to establish a view on the mindlike nature of materiality that accords with the latest discoveries of modern science. How? Was it a lucky guess? Did someone perhaps tell them? Or was it just plain old-fashioned intuition? Of the three possibilities, I suspect that the first is the least likely. For reasons that will become clear a little later, I am inclined to believe that the Greeks received this wisdom from their predecessors, but that intuition played a large part in their understanding of the teachings they inherited.

So what else is “Greek” in this present era of scientific discovery, with its particle consciousness, photon “telepathy,” and so forth? Is there any other knowledge that these ancient peoples possessed that might be relevant to this

enquiry? Indeed there is: there is the knowledge that they received directly from the Egyptians in the form of the Hermetic Code, which says that everything in this universe manifests strictly according to musical principles.

Once again we can see how strangely "modern" is this view, because scientists themselves are now speaking more and more in terms of a musical universe that endlessly vibrates, and of physical phenomena all possessing unique resonances of their own.

For example, in his book *Other Worlds*, Paul Davies describes the way electrons orbit the nuclei of atoms in a regular order, whereby only stationary patterns will occur. He compares the phenomenon to the standing wave-pattern of air in a particular set of organ pipes, where only certain established notes are permitted because the patterns of air-waves must fit into the geometry of the pipes. Similarly, only certain "notes" (frequencies, energies) are accommodated by the atom. When transitions occur between the normal energy levels, electrons emit characteristic colors—streams of photons—and these are the visual evidence of what Davies calls "this subatomic music." He continues:

> We can therefore regard the spectrum of light from an atom as similar to the pattern of sound of a musical instrument. Each instrument produces a characteristic sound, and just as the timbre of a violin differs markedly from that of a drum or a clarinet, so the color mixture of light from a hydrogen atom is characteristically distinct from the spectrum of a carbon or uranium atom. In both cases there is a deep association between the internal vibrations (oscillating membranes, undulating electron waves) and the external waves (sound, light).[4]

There are other musical relationships between atoms and their components. For example, all atoms are members of a whole, integrated family, ranging from the lightest, hydrogen, with one electron tracing a lone orbit around its nucleus, to the densest, heavily radioactive atoms, which have many electrons orbiting the nucleus in seven permitted energy levels. Remember that there are seven successive "energy levels" in the major musical scale. Obviously the eighth, transcendental "note" of this fundamental atomic scale is the whole phenomenon, consisting of all atoms everywhere.

Further, a recently developed classification system known as the theory of quantum chromodynamics suggests that beneath the materiality of the atom there are other essentially musical symphonies being played by nature. Scientists are currently classifying a certain category of subatomic particles according to a system known as the eightfold way. The theory is so called because it puts certain routinely observed "particle molecules" known as baryons, pions, and

mesons together in families of eight. The term was originally coined by the American physicist Murray Gell-Mann and was intended as a pun. He was apparently familiar with the "eightfold path to enlightenment" devised by the Buddha, and presumably felt that the name would add a lighter note to his complex mathematical theory. Doubtless the idea that the Buddha's belief system is in any way scientific would make Gell-Mann's toes curl. But, being unashamedly what the science writer Richard Morris has referred to as "one of those deluded mystics who manage to see parallels between theories in physics and ideas associated with Eastern mysticism," I would suggest that this is precisely the case, that it is no mere coincidence that the Buddha's musical interpretation of reality should so easily and naturally blend in with the foremost ideas of today's scientists. The "eightfold way" of the Buddha is a variation on the Hermetic Code, and like the "eight steps of learning" of his Chinese counterpart Confucius, it was founded on the idea that the whole universe is an essentially musical structure and that to realize this, to tune in to this fundamental reality, one had to conform to the laws and forces controlling it.

Thus, if we look closer at this chromodynamic system of classification, we shall see a quite familiar pattern emerge.

There are supposedly eight low-mass baryon wave/particles making one octet, eight pions forming a second octet and eight vector-mesons making a third—twenty-four in all. Now, this same family of particles also comprises, in addition to the octets, a complex triplet. This means that each of the eight particles in an octet is also a triplet, made up of three smaller particles, which Gell-Mann called "quarks." As we see, the structure of each octet (or octave) of triplets is identical to the symmetry of the I Ching, with its eight trigrams. And there is more. Gell-Mann's theory originally called for three kinds of quarks, called up, down, and strange—a subatomic "trigram." But, then, to these were subsequently added three more types of quark, called charm, bottom and top. Enter the hexagram. All we need now to complete the picture is the number 64. It would be highly fitting if we could find it, because sixty-four is not only the number of hexagrams in the I Ching, it is also the number comprising the council of Brahmins who, according to legend, foretold of the impending birth of the Buddha. In fact, as I pointed out in *The Infinite Harmony*, this particular number has surfaced not in quantum chromodynamics, but in what is known in physics as superstring theory.

The central idea in superstring theory is that subatomic wave/particles are in reality infinitesimally small strings made of space. These strings vibrate endlessly over an infinite range of frequencies, and their interactions give rise to the observed characteristics of all known particles. You really can't get more

intellectually obscure than the theory of superstrings, and I am personally completely baffled by it, involving as it does no less than ten different dimensions (three of space, one of time, and six of God-knows-what) and a system of higher mathematics guaranteed to make the layman's eyes glaze over in seconds. But no matter; all we need to know here is that this incredibly complicated system has created a superstring, out of nothing but space, that has precisely 64 degrees of movement associated with it. This supersymmetric system can apparently account for all subatomic quanta, and is capable, says the science writer Timothy Ferris, of "drawing all matter into an elegant picture in which particles' attributes are seen as the vibrations of strings, like notes struck on Pythagoras' lyre."[5]

So we're back to Pythagoras again, the original philosopher, a contemporary of the Buddha born five and a half centuries before Christ, who taught that everything in the universe obeys musical laws and who, like the yogis of India, believed that matter was "psychic." And both of these ideas, as we have seen, have now gained a metaphysical foothold in the mind of the modern scientist.

Now, if consciousness is material in some way—as Gurdjieff and Bohm both believed—and if matter is conscious, though on an entirely different scale, then could the higher possibly influence the lower, and vice versa? Pythagoras would very likely say yes to the former proposition, possibly citing the mysterious powers of Orpheus and Amphion as examples. But he would also, being what today might be called a natural mystic, have believed that the psychic presence in matter could indeed influence human beings. People today of a sensitive or intuitive inclination often feel that nature speaks to us in many different ways. Mountains and forests, for example, as many people instinctively know, have a particularly powerful presence. So too do many ancient artifacts, such as the Great Pyramid or the Taj Mahal, the Cathedral of Notre Dame, or a statue like the Sphinx.

Ouspensky recognized a similar close relationship between himself and nature. He describes one of his drug-induced experiences in his second major classic, *A New Model of the Universe*: "Everything was living, everything was conscious of itself. Everything spoke to me and could speak to everything. Particularly interesting were the houses and other buildings that I passed, especially the old houses. They were living things, full of thoughts, feelings, moods and memories. The people who lived in them were their thoughts, feelings, moods."[6]

In another passage, he preempts the modern physicist by describing the world he was seeing as "a world of very complicated mathematical relations": "this

means a world in which everything is connected, in which nothing exists separately and in which at the same time the relations between things have a real existence apart from the things themselves; or possibly, 'things' do not exist and only relations exist."[7]

Sri Aurobindo saw the world in exactly the same way. In his view, all apparent separateness on the physical plane is simply an illusion. In the state of enlightenment, he said, the unity of everything is perceived as a living reality, but as one descends from the higher to the lower states of consciousness, a progressive "law of fragmentation" takes over and "things" appear once more as isolated, separate entities.

And science, of course, now supports this view. As we have seen, all subatomic particles are also waves of different frequencies, and this means that everything is composed of a vast, interconnected web of interference patterns. Talbot, in *The Holographic Universe*, suggests that our brains mathematically construct this so-called objective reality by decoding these varying frequencies that are really projections from another dimension existing beyond space and time. So perhaps the great ocean of waves and frequencies "out there" looks solid and real to us only because our brains automatically reprogram all this "fluid" information into the familiar form of the sense objects making up our world. In reality, however, everything is a vast sea of highly resonant interference patterns. The sun and stars and the planet we live on, the Great Pyramid and the Sphinx, even the brain itself—all these physical structures are in essence composed of overlapping waves.

In the last chapter we discussed the work of Robert Jahn and Brenda Dunne, whose experiments with the randomevent generator and the "pin-ball" machine provided compelling evidence for psychokinesis. Having found evidence of this ability in a large proportion of their subjects, they came to some interesting conclusions concerning the possible nature of such a process. They proposed that since all physical phenomena possess a particle/wave duality, then perhaps consciousness does too. When in a particle-like state, consciousness would be localized inside the skull, but when in a wave mode, like all waves, it can produce effects at a distance.

In a similar vein, though not in relation to psychokinesis, the Cambridge mathematician Roger Penrose has also considered the effects of quantum processes in respect of the workings of the human mind. When speaking of "action at a distance" between twin particles (nonlocal quantum correlations), he suggests that such phenomena could be involved in conscious thought processes over large regions of the brain itself, and that perhaps there is a direct relation between a "highly coherent quantum state" and a correspondingly high degree of

awareness.

Jahn and Dunne have suggested that phenomena themselves are actually products of the combined interference patterns created by the wave motions of matter and the wavelike aspect of consciousness. They believe that psychokinesis occurs through an exchange of certain information between physical things and the human mind, not as a single directional flow from one to the other, but rather as a mutually interacting "resonance" operating between the two. These resonances sound something like the relations between "things" described by Ouspensky in the passage quoted earlier. Significantly Jahn and Dunne reported that the more successful volunteers often described a sensation of feeling "in tune" with the device.

Again, this is precisely what Indian philosophers and yogis have been saying since the dawn of their culture, that matter is responsive and that it is composed of resonating interference patterns, principally those of light itself. In his major work *On Yoga*, Sri Aurobindo describes a sphere of existence beyond space and time comprising a "multicolored infinity of vibrations," of waves. Physical reality, he said, is simply a "mass of stable light"[8]—which is precisely the conclusion I came to way back when I was experimenting with various hallucinogens. But all of this "stable light," according to the yogi, also possesses a measured degree of consciousness. This is apparently how yogi masters are able to influence the physical world: they have perfected a way of making direct contact with its rudimentary consciousness. Yogananda says much the same thing in his book *Autobiography of a Yogi*—that matter is simply "an undifferentiated mass of light." The "law of miracles," he said, "is operable by any man who has realized that the essence of creation is light."[9] So light has a very special place in the belief system of Hindus, which of course is why their most important annual festival—Diwali—is known as the festival of light. In fact, Hindus, Buddhists, and Eastern philosophers in general all emphasize the importance of light in their cosmological view of the world. Tune in to it, they say, and a whole new world unfolds. And so it would, for science tells us that light, the photon quantum, exists and operates in a timeless, spaceless, nonlocal realm. This, in my view, is the "eternal" world of the Hopi shaman, who can hold a "spaceless" universe virtually in the palm of his hand; the "infinite" world of the Egyptian priesthood, who taught that the soul of the godking can exist for "eternity"; the "heaven" identified by all the great revelationists in history, by people who have succeeded in glimpsing beyond the veil and bequeathed to us their illuminating testimonies of the extraordinary things they witnessed.

And, clearly, the prime mover in this nonlocal dimension is light, the Holy

Ghost. In this chapter we have seen how the modern scientist interprets this important phenomenon. In the following section we shall see what the primitive dreamers of former ages had to say about it.

8

Interstellar Genes and the Galactic Double Helix

In the four-dimensional structure of the solar system's long body we have seen how the planetary trails, all encircling the white-hot thread of the sun, form immense helices in space. If we imagine each of these individual sheaths to be coupled in some way with the greater spiral motion of the sun, as there are nine planets, we can say that there are nine "solar" helices. One of these, formed by the combined motion of the Earth and the sun, is fundamentally different from all the others, in that it contains life, consciousness, you, and me. This particular double helix is the "brain" of the solar being, the mind of Adam Kadmon.

But, of course, if this solar being is indeed organic, a "chromosome," then, theoretically, like all helices it too would have the capacity, in a still higher dimension, to create, to build even greater, more complex forms of life. So, just as DNA forms the nucleus of a cell in a physical body, and the human brain forms the nucleus of a cell in the solar body of mankind, so too would the mind of this solar being form the nucleus of a cell in the greater, galactic body. This further quantum leap, from the scale of the solar system to the vaster galactic scale, means that the human brain, earlier defined as the mesocosmic double helix between DNA below and the solar configuration above, now becomes a microcosmic entity in a yet larger existence, in which the solar being represents the mesocosmic creative force, and the galactic body the macrocosmic. We shall take a closer look at these relative scales later in this chapter.

In the last chapter we noted that Rodney Collin had discovered that the orbital cycles in the planets of the solar system produce major and minor conjunctions in time, whose relative values correspond very closely to the harmonic proportions of the major scale. This legendary "music of the spheres" was frequently alluded to by the writers of ancient Greece: it was referred to by Plato as the "song of the sirens." The hermetic symmetry of these planetary motions, as I have suggested, is an indication that there are genetic, organic processes operating in the planetary sphere.

It so happens that, very recently, further evidence has come to light concerning the relationship between the masses of certain stars that seems to

indicate that this planetary harmony may extend far beyond the solar system, out into the galaxy.

While I was working through the second draft of this book, which did not then include what follows, I received a phone call from Colin Wilson. He said he had been asked to review an updated edition of a book by Robert Temple called *The Sirius Mystery*, first published in 1976, in which there was some very interesting cosmological data that he felt would be of interest to me. Colin had already seen a hastily written first draft of this book and had been kind enough to offer some suggestions as to its presentation and format. So he knew exactly where I was coming from and promptly realized the relevance of Temple's conclusions to my work. He duly sent me a copy of *The Sirius Mystery*, which I had first read many years ago, but this new edition, as he had promised, proved to be very interesting indeed.

Temple is the man who introduced to the world the Dogon tribe of Africa, whose ancient and secret traditions contain very precise astrophysical data about Sirius and two other invisible stars in the Sirius system that have only been discovered in recent times. These two hidden companions of Sirius are known respectively as Sirius B, a white dwarf star first photographed in 1970 by Irving W. Lindenblad of the U.S. Naval Observatory in Washington, D.C.,[1] and Sirius C, a red dwarf star whose existence was only officially confirmed in 1995 by the French astronomers J. L. Duvent and Daniel Benest.[2] The Dogon, it appears, were well ahead of their time.

Temple believes, reasonably enough, that this knowledge came to them in the remote past, probably from Egypt. Then he advances the theory that the Egyptians and the Sumerians obtained this knowledge directly from highly advanced amphibious extraterrestrials from the Sirius star system. He cites as part of his evidence the prominence in certain myths of amphibious creatures, half-man, half-fish, who were said to have founded the first civilizations in the Fertile Crescent. The leading "fish deity" was known under various names on the eastern flank of the Crescent, although in Egypt there is no major god answering to the description given. In Babylon and Assyria this god was known as Oannes (possibly an early form of the name John); in Sumeria, Enki; and to the Dogon tribe in Africa, Nommo.

I have to say that Temple's idea of amphibious spacemen flying in from Sirius with their superior wisdom is not my favorite explanation for the birth of Earthling civilization. A more plausible theory is that the ancient civilizers appearing in all the major myths, said to have survived a Great Flood, landed on the shores of their new homeland in boats—hence the emphasis on the element

of water. This proposition is further supported by the theory of transcendental evolution itself, as interpreted in many ancient legends, in which the basic element of water is primarily an evolutionary symbol, expressing the central importance of the passive, "watery" element in the process of creation (see chapter 9).

So, according to the theory of transcendental evolution, superior or "extraterrestrial" intelligence actually develops from below. And it grows, evolves, organically, ever upward, toward the stars. Temple's view therefore appears to be upside down. His arguments in support of his theory are extensive, suggesting technical maneuvers on the part of the "fish gods" that defy comparison with anything ever accomplished on Earth, including the construction of the Great Pyramid. These include the use of water-filled spaceships capable of interstellar flight, and also the construction of Phoebe, the smooth-surfaced, tenth moon of Saturn, which Temple believes may be an artificial, water-filled satellite constructed, or perhaps "inflated," by these fishlike creatures and used as a kind of staging post on their intermittent journeys to and from Earth.

Notwithstanding our obvious differences concerning the true nature of "alien" life, Temple has discovered some interesting new facts concerning the Sirius system and our own sun, which appear to link both star systems with the Giza plateau, in particular with the Great Pyramid and the second Pyramid of Khafre (Chephren).

As the Great Pyramid has an apparent Sirius connection (that is, the southern shaft emanating from the Queen's Chamber, which targeted Sirius as it culminated at the meridian at the time of construction of the Great Pyramid), Temple proposes that it might be a representation of the "invisible" star, Sirius B, and that the slightly smaller Pyramid of Khafre represents our own sun. This view might appear to fly in the face of the suggestion made by Robert Bauval that the three Giza Pyramids represent the three stars of Orion's Belt. The whole necropolis, however, as we have seen, is extraordinarily multifaceted, so it would hardly be surprising if we were to find yet more information relating to the Sirius system encoded within the design.

Temple begins by comparing the sides of the slightly larger base of the Great Pyramid (755.79 feet) with the sides of the base of the Pyramid of Khafre (707.75 feet), calculating that the sides of the Great Pyramid are 1.0678 times those of Khafre's. He then notes, using the newest available astrophysical data, that the mass of Sirius B is 1.053 times the mass of our sun. As he says:

The correspondence is thus accurate to 0.014. However, even this tiny

> discrepancy may be highly significant. For 0.0136 (which rounded off is 0.014) is the precise discrepancy between the mathematics of the octave and the mathematics of the fifth in harmonic theory, where 1.0136 is referred to as the Comma of Pythagoras, and was known to the ancient Greeks, who are said to have obtained knowledge of it from Egypt.[3]

As a matter of fact, I have already discussed the Pythagorean Comma in my earlier book, in which I proposed that it was intended to highlight the fundamental difference between ordinary, practical music and what I call "esoteric" music—ordinary music, I believe, having been considered by the Pythagoreans as being slightly "off-key" from the true harmonic constant from which life is created.

Temple expresses much the same idea in his revised version of *The Sirius Mystery*, in which he calls the discrepancy of 0.0136 (rounded off to 0.014) the Particle of Pythagoras: "Essentially, one could say that it expresses the minute discrepancy between the ideal and the real."[4]

Temple's "ideal" music in this context is what I would call "esoteric." "Real" music therefore is ordinary practical music. The harmonic deviation described by the comma is significant, raising the wider issue of how this discrepancy might have been rectified by the Pythagoreans: how they transformed ordinary music into what Temple calls the "ideal" kind. I have dealt with this in some detail in *The Infinite Harmony*, where I suggest that the marginal imperfection of ordinary music was connected with the "glitches" of the major scale. As I pointed out in the introduction of this book when introducing Gurdjieff's exposition of the law of octaves, these "glitches" are identified as the two points in the octave where the rate of increase in pitch frequency between one note and the next retards, that is where there are not full tones but only half-tones: between the notes mi–fa and ti–Do. This inherent deviation in the line of development of an octave in ordinary, practical music is the underlying pattern of development of all natural phenomena, and accounts for the vast multiplicity and variety of physical forms in the universe. Thus, while the music of our favorite composers and artists sounds perfect to our ears, the Pythagorean Comma indicates that it is never quite so.

"Ideal" music, however, the esoteric music of the Greeks, is organic music, the music of the Hermetic Code and the genetic code. This very special kind of music actually takes account of, and rectifies, the discrepancy highlighted by the Comma. Essentially, of course, this is the "music of the mind," the music from which life itself is created. It is Egyptian alchemy, which involved the application of the law of octaves as a mode of being, but with a very slight yet

crucial additional input in each developing scale at precisely the two semitone points mentioned above. This means that a fully developed "psychological" or organic octave is composed not of seven stages, as in a normal scale, but of nine, because it includes within it the two extra impulses at the points of the missing semitones. If we remember that each of these nine stages, according to the second fundamental law of nature, is itself an octave, then quite clearly we have a genuinely perfect scale consisting of sixty-four "inner notes" (9 x 7 + 1, the 1 being the final Do).

Readers wishing to explore in greater depth the theory of the "missing semitones" may care to consult the relevant section of my previous book,[5] but for the present we must return to the main cosmological theme of this chapter.

Temple goes on to reveal that the precise value of 1.053, which we have noted has only very recently been identified as the exact ratio of the masses of Sirius B and our own sun, was very accurately expressed by the astronomer/mathematician Macrobius in the fifth century CE in the form of the "sacred" fraction, 256/243. Macrobius claimed that this fraction, which was also referred to by several of his contemporaries, was used in harmonic theory by people who he himself referred to as the ancients.

Temple suggests that this apparent harmonic connection between Sirius B and the sun—stars that, on a universal scale, are virtually neighbors—might in fact be implicit throughout the universe, at least between localized white dwarf stars and ordinary stars like the sun. The wider implication is that all types of stars could have relative masses corresponding in some way to the established ratios of harmonic theory, that is, with the ratios embodied within the Hermetic Code.

One possible way of explaining this long-range coordination, says Temple, is to regard the two solar systems as inhabiting the same "cell" of space. This idea has emerged from a new area of research known as Complexity Theory, which involves the study of the sudden appearance and disappearance of order in the greater cosmos. It has been noted that something that looks very much like instantaneous communication occurs in such "cells," "whereby huge macro-regions of space behave as if their elements were not separated by spatial or temporal distance, and the 'cell' engages in what is called 'self-organisation.'"[6]

We have already identified what appears to be a microworld equivalent of this kind of process in plasmas, where billions of electrons simultaneously perform coordinated movements, exactly as if they were all communicating nonlocally. Another example cited by Temple is the Bénard cell, a thermal phenomenon caused by convection in a fluid, in which millions of individual molecules instantaneously align. He also notes that there are other similar phenomena in

nature, such as the simple sponge, which can transmit stimuli from one end of its body to the other at apparently “impossible” velocities, as if the whole creature were a single giant cell or neuron. This is not dissimilar to the proposition made by Roger Penrose, the Cambridge scientist mentioned in chapter 4, who suggested that “nonlocal quantum correlations” might occur between widely separated regions of the brain, thus enabling billions of individual neurons to respond as a coherent whole—a microcosmic equivalent of the Greek concept of homonoia, a “union of minds,” or, in this case, of neurons.

Obviously the principle of nonlocality is hard for us to understand. It defies ordinary logic and excludes the time and space familiar to our ordinary senses. But while the nonlocal realm—what I have called the plane of light—might be difficult to conceptualize, there is a sense in which music itself can provide an explanation for the kind of simultaneous coordinated action we have been considering here.

This centers around the eighth and last note of an octave, Do, which, once struck, simultaneously becomes the first note of a higher octave, a greater scale. Such a note has dual properties, existing in two different scales at one and the same time. So let’s say that the whole range of biochemical vibrations produced by neurons in the brain or in a sponge develop inwardly as an octave, and that ultimately this octave begins to vibrate, to resonate, at its optimum potential. When this occurs, the entire evolutionary scale becomes fused into one final note, Do. In this way all separate components of the scale not only become simultaneously interconnected with all other components, no matter what their “position” in the scale, they also become simultaneously connected, through the ultimate note, with the next scale or dimension above.

In the same way the RNA codon template, created by DNA from three inert chemical bases, or three harmonious “octaves” of chemical resonance, simultaneously becomes a single new biochemical “note”— an amino acid—one of twenty-two comprising the greater scale above. Thus, although the process is essentially linear, taking place in time, there comes a point where a kind of simultaneity definitely does occur, where lower scales are suddenly transcended, and where time and space count for nothing. The same could apply, of course, to the higher scales of biochemical evolution, perhaps when the amino-acid chain transmutes “up” into the scale of the protein macromolecule, or when the protein evolves up further into the scale of organs, or of glands, bone, tissue, and so on. In all of these transitional stages of evolution there must be points where the notes in one scale all combine to strike simultaneously a single new note up into a greater scale. Therefore, these “nonlocal correlations,” in addition to being a general property of nature at the quantum level of existence, probably manifest

at many different levels on the evolutionary ladder.

As Temple says, if a simple sponge can defy space and time at the bottom of the sea, then it is not unreasonable to suppose that these greater "cells" above can do so within the galaxy.

Inevitably, perhaps, Temple is ultimately drawn to consider the possibility that such macrocosmic cells, which he calls Anubis cells (Anubis being the jackal-headed deity of the Egyptian pantheon associated with the "dog star" Sirius), may be alive. "The vast Ordering Principle," he says, "may be an Entity."[7]

Quite so. Hermetic is genetic, and the musical symmetries evident in the planetary sphere of our solar system, and in the mass ratio of Sirius B and our sun, indicate that this life force may be prevalent throughout the entire universe. Remember also that the basic structure of all life-bearing phenomena is the spiral, the helix—and the entire cosmos, as we have seen, is positively teeming with these "serpents in the sky."

Our own solar system is comprised of nine such serpents, all coiled around the path of the sun, while the motion of the sun itself traces an infinitely greater helix winding around the central path of the galactic center.

The most distinctive of the nine "lesser serpents" described above is, of course, serpent Earth, from which has developed the evolving "solar mind" of the human race. Of course, if this greater helix is a cosmic "chromosome" developing in an organic fashion deep inside some kind of cell nucleus, then logically one would expect to find the greater body of the host cell all around it. In this case, the most obvious structure in evidence is that of the solar system itself.

Interestingly enough, when we look at the solar system in relation to the greater body of the Milky Way, its position appears strikingly similar to that of certain ordinary living cells. We could compare it, for example, to the position of a single blood cell in the human body. Like the solar system, a white corpuscle is structured around a central nucleus, or "sun." Floating around the nucleus are smaller components of varying size, complexity, and energy content, such as enzymes, mitochondria, ribosomes, RNA, and so on. These components all exist inside the body of the cell, floating around in a watery medium, a liquid membrane known as the cytoplasm. Beyond the walls of the individual blood cell and separating it from all others is more fluid membrane.

The boundary of the cosmic "cytoplasm" of the solar system might be defined as the sphere of the sun's immediate magnetic and gravitational influence, the sphere in which all the planets, asteroids, comets, and other orbiting materials are contained. The "cytoplasm," however, or the medium in which the components of the solar system exist and operate, would be infinitely more

rarefied than the liquid membrane of the cell, or even the air we breathe on Earth, but it must be just as real nonetheless and it similarly must fill the whole system. Possibly this medium is light itself or, rather, the entire spectrum of electromagnetic radiation, which extends far beyond the boundaries of the solar system and is the medium in which all greater cosmic systems exist.

The spiral galaxy, consisting of billions of these "solar cells," is composed mainly of hydrogen-burning stars, vast, interstellar clouds of cosmic dust, or nebulae, and, one assumes, billions upon billions of planets, all whirling around a central nucleus of super-dense energy—a black hole, perhaps. And this great cosmic firework, with its immense spiral arms, as well as spinning around its central axis, is also hurtling through space at a velocity of around six hundred kilometers per second. Therefore, as with the solar helices, if we wish to perceive something of the galaxy's true form, we must try to visualize it not in the timescale involved in taking a frozen snapshot of it, a few seconds or a minute or so, but in that of the galactic being itself. In such a scale, a few "seconds" might be equivalent to hundreds of thousands or even millions of our years. So, if the four-dimensional structure of the galaxy could somehow be captured by time-lapse photography, after a few of its "seconds" or "minutes" we would see something very similar to the long body of the solar system described by Rodney Collin, an immensely elongated, shimmering spiral of electromagnetic radiation coiling toward infinity—another true helix.

This image of a long helical body really only describes the basic physical or four-dimensional form of one of these macrocosmic "chromosomes." But, like the DNA strand in a cell nucleus, the brain housed in a skull, or the creative solar mind of the human race, its overall complexity and influence would far exceed the scale of its origin. In fact, what we see when we look at the contents of the nucleus of a cell, a cerebral cortex or a solar system is merely a simplified cross-section of the whole entity.

For example, we look at a DNA strand and see only a relatively simple chain of chemically encoded digital instructions. Yet scientific investigation has shown us another, much more powerful dimension to DNA: it reaches out and indeed controls all of the creative functions in every part of the greater "world" in which it exists, that is, in the entire body of the host organism. Thus a single gene located in the chromosome of the first reproductive cells of an evolving organism may ultimately determine such features as the color of hair or eyes, the configuration of bone structure, and other complex characteristics.

Similarly the human brain can be scientifically reduced to its simplest form by describing it as a mass of neurons interacting through chemical reactions and electrical impulses, all comfortably housed in a protective covering of hard bone.

But quite clearly the skull itself does not even remotely define the real boundaries of the brain's existence. The brain, like the chromosome, is merely the physical manifestation of a much greater, profoundly more complex entity, one capable of thinking conceptually or of dreaming up imaginary worlds, that of traveling backward in time through memory or alternatively speculating its way into the future. It can transmit information to other brains, it can intuit, impress, inspire, it can even, many believe, communicate telepathically, directly influence physical objects, predict coming events, and so on. In effect, like the DNA double helix, the brain is potentially as big as the "world" in which it functions.

The solar helix, or the collective mind of humanity, would clearly be of an order of consciousness far more advanced than any we could imagine. The "organism" in which this helix is housed would be composed of the entire body of mankind's accumulated wisdom, every idea, theory, or belief system that has ever been conceived, or ever will be. Trying to understand the true nature of such a being, whose life span would be measured in hundreds of thousands of our years, would involve studying, in the minutest detail, every intellectual and spiritual discipline known or yet to be developed. Like the two orders of helices below it—the human brain and DNA—we would expect the solar helix to exert creative influences reaching way beyond its own scale of existence, out into the greater body of the host galaxy.

In the same way we see the greater galactic helix as composed of symmetrical, localized concentrations of matter and energy traveling through a given region in space, but its greater presence, or the totality of vibrations issuing from it, spreads far and wide. We know the galaxy is formed like it is because there are four fundamental forces ("bases") keeping it together: the short-range strong and short-range weak nuclear forces, the gravitational force, and the electromagnetic force. The electromagnetic radiation emitted by all the stars of a galaxy spreads out at the speed of light in all directions, extending over distances of billions of light years from the source of origin. Therefore, the outer limits of all the light that has ever been emitted from the galactic helix, together with the outer limits of the gravitational influence it has exerted from the time of its formation, represent the greater body of the galaxy itself. Thus, as with the DNA double helix, the human brain, and the solar helix, we can say that the potential influence of the galactic "mind" would also be as immense and complex as the "world" in which it exists.

Scientists will argue that a galaxy cannot conceivably possess any kind of consciousness, that it is simply an involving, runaway mass of chemical elements randomly exploding and flying off in all directions according to basic

physical laws. But then, the often-violent electrochemical reactions taking place inside an active human brain could also be described in much the same way—and yet we know that consciousness dwells there. Similarly the superactive speed-of-light fusion of electropositive elements combining, through photon interchange, with electronegative elements in the atomic chemistry of dynamic, evolving biomolecules would also give the appearance, to a microcosmic onlooker, of being a purely physical, entropic process. But we know that this entropy observed in the genetic microworld is basically an illusion, for from it evolve immense, harmoniously proportioned, and long-living organic structures.

In the case of the solar being, whose extraterrestrial body, remember, is constructed from the metaphysical "gene pool" of mankind's collective consciousness, disorder seems, at least on the surface of things, to be endemic. Go into any large town or city on a normal day and observe the inhabitants going about their business, rushing, pushing, shouting, hustling, absent-mindedly moving around in random directions, each of them in a private world of their own, with hardly ever a thought for the planet we live on, or the solar system within which it rotates, or the galaxy on high. No homonoia here. Elsewhere men are warring with and killing one another in a hundred different regions of the world, famines are ravaging millions of helpless and innocent victims with merciless regularity, global ecological disasters are occurring almost daily. All this evident confusion is "cacophony," a general manifestation of the social animal at its worst, with consciousness locked in a materialistic, dualistic stupor. No homonoia here either.

And yet beneath all this apparently chaotic activity there is, in fact, an underlying current of metaphysical harmony that has been continuously flowing throughout recorded history in the form of hermetic ideas. Fortunately for us, and presumably also for the Helix above, these concepts, being psychologically sound, are infinitely more "resonant" than the crass "isms" that man is prone to preach. This is precisely why, just like successful genes in the evolutionary processes of the microworld, they are so faithfully replicated and passed on for future generations by millions of other human minds.

This solar being, whose metaphysical "body" we have just described, is but one of around one hundred billion in our galaxy alone. If we assume that these beings possess "minds" with a degree of consciousness of some macrocosmic order, then presumably their "thoughts" or "concepts" would also have substance to them and would in turn be synthesized at a higher level in the construction of an infinitely greater galactic body. The real nature of such godly thought processes lie beyond our ordinary comprehension, but the manner in which they evolve must in principle be identical to the evolution of the helices

below—the DNA molecule and the human brain. Therefore, the "concepts" or evolutionary signals engendered by the solar being above us, assuming they are of an "immaculate" order, would simultaneously be passed on, or transmitted, to other solar beings in the galaxy. So, like the dominant or active genes of DNA, or the hermetic ideas of creative mankind, the more successful of the "ideas" conceived in the solar helix will be replicated by other conscious beings in its "world." This will construct the body of an even greater organism—the galactic being.

But what about the mind of this greater entity? Where is it? How does it operate?

As I said earlier, the body of the galaxy is composed of billions of individual solar systems, or solar "cells," but its mind, evolving transcendentally out of the collective consciousness of all the solar beings in a given galaxy, is identifiable in the overall four-dimensional helical structure of the galaxy itself—the galactic "chromosome."

The order of consciousness of the solar being, as we have seen, is complex enough in itself, but it can, nevertheless, be explained in fairly rational terms, that is, as a composite structure formed from the entire body of humanity's collective consciousness, its accumulated secular and esoteric wisdom. But when considering the kind of "consciousness" our own Milky Way might possess, which clearly would exist and operate in a scale of being unimaginably greater than the solar scale, we are touching on possible processes so refined and ultra-resonant that they must remain for us hypothetical in our present state of evolution. This does not, however, prevent us from speculating on the nature of these projected "galactic vibrations."

Possibly the most distinctive features of these galactic vibrations would be their relative pitch frequencies and their rate of transmission. These higher creative processes would operate with degrees of resonance far more rarefied than those emanating from the helices below.

When we considered the solar helix, we identified its two principal properties or components as the active emanations of the sun (light) and the passive, metaphysical vibrations of the Earth (consciousness). These, I suggested, were "light" and "consciousness" of a different order from the light and consciousness of our ordinary world. Significantly the nature of the more rarefied light of the solar helix is described by the Hermetic Code and by the Magic Square associated with the Great Pyramid—"The Lights"—as a squared phenomenon, the square of the constant. Such, therefore, would be the nature of the "light" of the solar helix. The nature of the more rarefied consciousness of the entire human race would therefore have to correspond accordingly, and would

presumably be as far removed from ordinary consciousness as the speed of light is from the square of the speed of light.

The galactic helix, however, whose scale of being is at least one hundred billion times more extensive that that of the single solar helix, would probably be engaged in an exchange of energies moving, or vibrating, at frequencies far in excess of the square of the speed of light. As we know, Special Relativity asserts that nothing can travel through space faster than the constant velocity. But of course we have seen from the nonlocal connections existing between interacting quanta that information can "travel" instantaneously from one to another—through the quantum field, where space and time simply don't exist. Possibly this is how these great galactic beings, whose sheer magnitude make even the square of the speed of light seem hopelessly inadequate as a universal rate of intelligence transmission, might "speak" with one another.

We are now poised to make a final ascent to the very summit of Jacob's evolutionary "ladder," beyond the scale of the "angels" (suns) and the scale of the "archangels" (galaxies), and out into the realms of the Absolute scale—the universe in its entirety. In this scale, the mighty galaxy, whose three-dimensional form is measured in tens of billions of light years across, is but a single cell in the body of its host. And just like all cells, the cells of planetary organisms, the cells of the solar body (you and me), and the cells of the galactic body (like our solar system), this greater galactic mind must ultimately have the ability to create, in the greatest scale of them all, the ultimate, universal being.

Before we continue our journey across the universe, it is worth reflecting for a moment on the overall evolutionary picture we have just been describing. This is a picture, remember, that was first outlined by Egyptian metaphysicians in the third millennium BCE and that was neatly summed up in the phrase "As above, so below." Now you may or may not accept this scenario of ascending, living scales as the real thing, but whether this view is literally true or not, it is nevertheless unique in the entire history of philosophical thought in that it provides a very plausible answer to two of the most fundamental and puzzling questions of all, questions that, as I explained in the introduction of this book, were the cause of much consternation to me as a boy: why are we here? Is there life after death? The theory of transcendental evolution pulls no punches here: it answers these two questions in a quite straightforward and unambiguous way.

According to this original creation theory, we are here as a direct result of nature's grand design, all of us being—potentially at least— vital and integral parts of a much greater evolutionary process. This process begins in the "primordial waters" (with the DNA–RNA complex), it then evolves up through the consciousness of sentient beings like ourselves, then further still into

“angelic” (solar) and “archangelic” (galactic) form, ultimately to flower into the superconscious “mind” of the universe itself—the ultimate “helix.” We are a crucial link in the chain.

On the second question—of life after death—hermetic theory is equally emphatic. Of course there is life after death, for death itself, the final note, Do, at the top of one’s own personal scale of evolution, is also the first note of the greater scale above. By this account, not only is there life after death, but, compared to the ordinary timescale of the modern hominid, it would be, as the ancients have always said, a “life everlasting.”

The implication of this upward evolutionary motion is that the universe seems destined to become fully conscious of itself. But then perhaps it is already; it is certainly old enough to have come of age by now. Maybe this is why photons are so acutely aware of happenings in the greater quantum field, or why billions of electrons in plasmas and metals can act as if they already know what billions of other electrons are about to do. It’s as if there is a general “awareness,” even at the most basic level of material existence.

Sri Aurobindo said that the universe was wholly conscious and that if just one point in it were not so, the whole fabric would break down into a lifeless void. He was merely echoing the Greeks, of course, but the message remains the same, which is that the universe is, in fact, already conscious of itself, and that it is merely waiting for us to realize this and contribute toward its maintenance. Perhaps this is why the God of the ancients was said to be so concerned for our well-being. We are his life-blood.

9

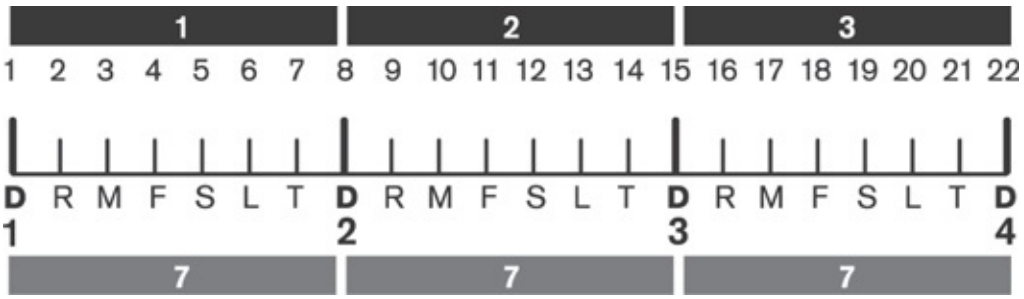
The Hermetic Universe of Ancient Times

By now readers might appreciate how important and significant are the evolutionary ideas of the ancients, and in particular the musical revelations of the Pythagoreans. We know, however, that Pythagoras, like all other great spiritual leaders, was merely passing on knowledge that came originally from the priest-astronomers of ancient Egypt. Possibly the Egyptians also inherited the main tenets of this wisdom from the fabled flood survivors of ancient myth, who themselves could possibly have received instruction from an even earlier race. This continuous evolutionary line appears to have originated in the belief system of the "primitive" Neanderthal, who regarded the number 7, the fundamental symbol of the octave, as sacred. The seven bear skulls found in the stone altar at the Neanderthal site at Drachenloch in Switzerland indicate that this sacred number symbolism dates back at least 75,000 years.

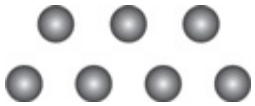
With the Greeks, however, came a much more overt, logical description of the theory of transcendental evolution, which the Pythagoreans neatly summed up in the two key esoteric symbols already discussed, namely the classical formula *pi*, 22/7, and the original "philosopher's stone," the Tetrad, illustrated by placing ten pebbles on the ground in the shape of a 4–3–2–1 triangle.

The Tetrad was called by the Pythagoreans the "model of the gods" and the "source of nature." It was thus regarded as the blueprint for the development of all evolutionary phenomena, above and below: the 4–3– 2–1 format of the symbol is in fact a remarkably accurate blueprint of the processes involved at the biomolecular level, for it describes perfectly the sequences of genetic processes involved in the synthesis of amino acids.

The formula *pi* is also an expression of the same evolutionary process. So the four-base/tripleoctave symmetry embodied in the classical convention, 22/7, which can be expressed diagrammatically like this:



denotes the first two levels of the Tetrad:



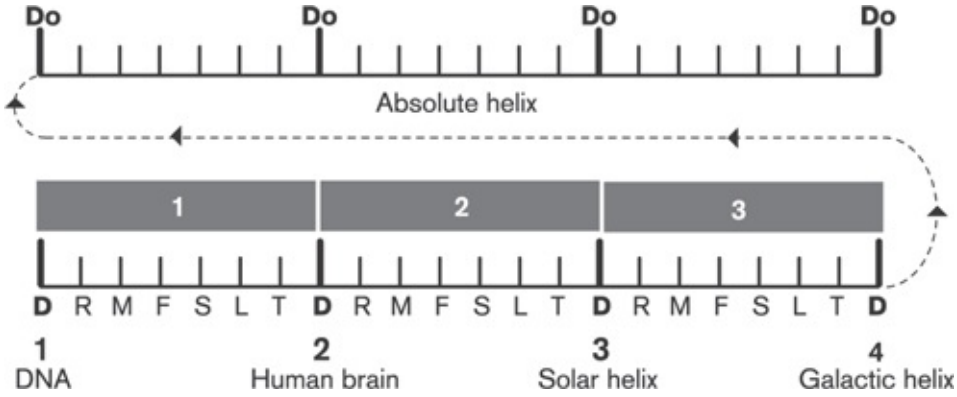
The two higher stages in its evolutionary development, marked by the two pebbles at the third level and the single one at the apex, are a combined expression of the greater “trinity” above.

When this model is applied to the higher evolution of the individual, the combined four-and three-pebble stages, with their four-base/tripleoctave symmetry, represent the fundamental qualities of all human beings—walking trinities with the capacity to sense, emote, and perceive. By and large, we can all do these things to greater or lesser degrees; they are perfectly natural human functions. The next two stages in the Tetrad, however—the third, denoted by the two pebbles, and the fourth, with its single pebble at the apex—stand for higher human functions that unfortunately are not universal. This is where what we might call “original thought” comes into play, which is the harmonious product of a balanced combination of our sensations, emotions, and perceptions. This spark of real consciousness is denoted by the first of the two pebbles at the third stage of our evolutionary Tetrad. The second pebble represents the other side of this metaphysical coin: light itself. The topmost pebble therefore symbolizes the final, transcendental note of this whole musical process. Generally referred to nowadays as a “concept,” this signal, harmonious and therefore transcendental, then continues to exist as a single new note in the greater scale above. We see from the genetic code that the “greater scale,” the scale up from the base scale of the four chemical bases, consists of precisely twenty-two higher notes—twenty amino-acid signals and the two signals coding for “start” and “stop”—a triple octave. It follows, therefore, that the greater scale into which the conscious mind can input is also structured as a “triple octave,” a “trinity” above.

We can now try to apply the process described by the Tetrad to the greater cosmic scales outlined in the last two chapters. If solar beings and galactic

beings are for real, they should fit easily into an overall hermetic picture of universal events.

As we have noted, the Greeks believed that all cosmological entities like the planets and the stars were conscious beings, and that the universe itself was a living animal—a zoon—and therefore completely organic in nature. We have seen how such an organism might develop, through an ascending hierarchy of scales, from biomolecules to galaxies. Remembering that there are exactly four of these fundamental scales, we can envisage the whole universe as being a vast, cosmological representation of the Hermetic Code itself, a multidimensional Tetrad:



One of the most significant features of this diagram is that the four orders of intelligence depicted, from DNA to the galactic helix, are each represented by the note Do. That is, they are all manifestations of the very same note; only the scale is different. This, of course, is precisely what is being alluded to in that all-embracing dictum of Thoth, “As above, so below,” which tells us that the symmetries of the processes of creation are the same at every level of existence, above us, below us, and in between, of course, in our minds.

So these four basic orders of intelligence or life all resonate at compatible frequencies, with each successive note, Do, vibrating, according to musical theory, at exactly twice the pitch and frequency of the preceding one. An octave, remember, is a measure of the doubling of the rate of vibrations in a given scale. This indicates that there are unique, tangible connections between the four “base notes,” the vibrations of each being whole-number coordinates of the greater evolutionary scale.

Theoretically the super-resonant galactic helix, representing the ultimate note, Do, of the third and final evolutionary octave, would ultimately have the power to strike a single new note up onto the greatest scale of them all: the universal scale. What happens beyond that is anybody’s guess. I have found myself trying

to envisage here a dynamic, cyclic scenario, whereby a given proportion of the energies created by the galactic helix reenters, possibly through the quantum field, the primary DNA scale. After all, some thing, some kind of force or intelligence, is ensuring that the universe manifests and evolves strictly according to the laws described by the Hermetic Code, and the most obvious choice as to the possible source of this intelligence surely must be the ultimate product of the whole evolutionary process. Remember that the galactic helix, the fourth and last base note of our universal triple octave, is in fact reinforcing, at a higher pitch and frequency, the first base note of the entire scale, represented by DNA. But DNA is not simply a note. It is also an entire scale, and the first "note" of this primary DNA scale would have to be one of the base notes of the genetic code, one of the four inert chemical bases. Conceivably therefore, it could be at this stage, on the level of the simple inorganic molecule, that the creative vibrations of the galaxy above reenter, through the quantum field, the endless cycle of life. Thus the chemical base might seem inert from a scientific perspective, but in reality it may have already been imbued by the powers above with some sort of rudimentary, radarlike intelligence, providing it with at least enough awareness to be in the right place—the living cell—at exactly the right time.

REINCARNATION

As an interesting aside, it is worth pointing out that the process of evolution described above hints at a possible explanation for the emergence of the Buddhist and Hindu beliefs about reincarnation, which is also a cyclic description of evolution.

The Pythagorean concept of metempsychosis, or the "transmigration of souls," expresses much the same idea. Pythagoras regarded the soul as a fallen angel locked within a body and condemned to a cycle of rebirths until it has rid itself of all impurities. The cycle being described, from birth to death to birth again and so on, could be regarded as being, in a sense, circular, where the evolving entity keeps returning back to the point of departure, or to the moment of its conception. But then, if the soul were improving its lot at each turn, this would imply a slight "upward" movement after each cycle, one lifetime being superimposed on top of the next in ever-ascending circles. This is significant, for, if we were to draw an imaginary line tracing the path of this recurring entity as it gradually evolved, the overall figure so described would take the form of the most fundamental configuration of all evolutionary processes—a helix.

Unfortunately this question of recurring lifetimes represents something of a

departure from the main thrust of this study. A detailed investigation would require a great deal more time and space than I currently have. Possibly some time in the future we might be able to investigate this subject in more detail, but for the moment we shall continue our search for evidence in support of the ancients' view of a living cosmos.

THE CONCEPTION OF THE UNIVERSE

The Greeks' definition of the universe—a zoon—is wholly unambiguous. They regarded the whole cosmos as the biological product of a fertilized ovum, a living, organic creature conceived through some form of procreative activity. By whom or in what is clearly the most profound mystery of all.

Whatever its genealogy, however, most origin myths agree that the present universe was created, or rather conceived. Take the example most familiar to Christians: "In the beginning God created the heaven and the earth."[1]

In Genesis, the creation or conception of the universe is described as having taken place in a watery medium, which in ancient scriptures always has a feminine or passive connotation: "And the spirit of God moved upon the face of the waters."[2]

Then comes the moment of conception, the initial act of (pro)creation: "And God said, 'Let there be light'; and there was light. . . . And God divided the light from the darkness."[3]

So the primordial cosmic "ovum" divided into two complementary yet quite distinct proto-cells, one light, one dark, or one active, one passive.

In a similar vein, the Vedic version of universal origins asserts that God "first with a thought created the waters, and placed his seed in them."[4] This again suggests that the origin of the universe was primarily a natural biological event.

In Vedic literature there are hymns dedicated to the god of the primeval waters. This is Indra, the god of rain, who is said to have released the waters to flow into the cosmic ocean and to have revealed the creative light of the god Agni—the sun.

To the early Greeks too, water was considered a primary element of creation. The philosopher Thales, for example, believed that the Earth floated on water, which was the medium from which all life evolved. Much the same view was held by the Pythagoreans, who thought that sunlight penetrated the primeval slime of the Earth to generate life.

Of all known origin myths, the Egyptian account is possibly the oldest. Thus each of the above examples is merely a reprise of the original theme, first set out

by the priests of Hermopolis, the spiritual seat of Thoth. Hermopolitan myth speaks of eight principal gods who appeared simultaneously on the “Island of Flame,” which rose like a hill from the eternal waters.

As we can see, virtually all of these creation myths agree on two fundamental points: first, that before the universe/world/life came into existence, there were only endless or eternal waters—the passive, negative element—and second, that the creative act itself involved the introduction of light, or a flame—the active, positive element. Very often this fusion of forces is described as having occurred through the intervention of a god or gods—the universal mediating principle. Excluding this latter allusion to “divine intervention,” we are left with a description of the universe’s creation that in fact bears striking similarities to that currently on offer from modern science.

THE SCIENTIFIC PERSPECTIVE

Possibly many readers will already be familiar with the “big bang” theory of the origin of the universe, a proposition first put forward by the Belgian priest-astronomer Georges Henri Lemaitre in the 1920s. This is now generally accepted as the most likely explanation of how matter, space, and time came into being. A persistent background microwave radiation spreading out evenly across the entire cosmos and with a temperature of around 3.5 Kelvin (3.5 degrees above absolute zero) was recorded by the radio-astronomers Robert Wilson and Arno Penzias at Bell Laboratories in 1964. Most scientists now agree that this radiation is very probably the residual vibration of the creation of the universe, of the biggest bang in history.

But what exactly was it that originally went bang? Lemaitre suggested that the universe had been born from a single primeval quantum of potential energy, a kind of superdense mother of all atoms. After the initial cataclysmic explosion, this primordial “atom” began dividing so rapidly and energetically that it eventually gave rise to all the matter in the universe. As the first atomic nuclei (protons and neutrons composed of quarks) proliferated, with quantum duplication taking place at a phenomenal rate, space and time simultaneously unfolded to accommodate them. This means that before the primordial quantum split asunder and the resultant superhigh energies began to radiate out from the “epicenter,” there was no space, no time, nothing except the original quantum itself.

Lemaitre realized that quantum theory supported this idea of space and time appearing after the big bang. As we saw earlier, in quantum mechanical calculations, space and time are statistically meaningless in respect to individual

events involving subatomic quanta. Therefore, if the universe did originate from a single, self-duplicating quantum, space and time would not have existed at that point; they would not have appeared until the primordial “atom” had duplicated in sufficient quantities to produce a significant number of measurable quanta.

According to big-bang theorists, the universe was in thermal equilibrium during its earliest development and was filled with the most intense light traveling out in all directions (“And God said, ‘Let there be light’”). The temperatures involved at this stage would have been in the trillions of degrees. The original wavelength of these first generations of photons would have been very short, but as space expanded it stretched out the wavelength of the light, so producing a one-way shift to lower and lower temperatures—white light shifting to blue, blue to red, and so on. The present cool state of the universe, barely 4 degrees Celsius above absolute zero, is the end result of this fifteen-billion-year-long fireworks display.

Within half a billion or so years after the primordial conception the force of gravity caused pockets of high-density dust clouds and atomic nuclei to condense into galaxy formations. We can still observe such a process at work in the creation of protostars (“baby” stars) forming as dense clouds of cosmic dust collapse inward, such as is currently being observed in the Large Magellanic Cloud system, a member of our own immediate cluster of local galaxies.

Individual stars within these galaxies are all born as protostars. As they develop through high-energy nucleon collision caused by gravitational collapse, these baby stars rapidly approach maturity and ultimately “ignite,” converting hydrogen to helium at a phenomenal rate. At this stage they are classed as mature, “main sequence” stars—like our own sun in its present state. Main sequence stars, after billions of years of relatively constant, active life, eventually metamorphose into old-timers—red giants. Red giants then either degenerate gradually to become static white or brown dwarfs, or they reach a critical energy level and explode as supernovae. A supernova is a star that has become pregnant with a vast store of nuclear energy and ultimately explodes, projecting massive quantities of radiation and heavier chemical elements back out into the cosmos, where it is then recycled. It’s an interesting reflection that every single atom of which you and I are composed came from exploding supernovae out there in deepest space.

Until very recently it was thought that any region of space was much the same as any other—that galaxies developed relatively undisturbed by other concentrations of mass. This view of a uniform distribution of galaxies was initially supported by data obtained from high-altitude flight experiments using redeployed U2 spy-planes. These experiments, coordinated by the American

astrophysicist George Smoot in 1995–96, appeared at first to show that the universe is expanding uniformly and with a constant speed in all directions. However, more accurate experimental procedures later revealed that this was not so and that in fact galaxy densities are not strictly homogeneous and that there are huge clusters of galaxies gathering in some regions and vast expanses of empty space in others.

Our own galaxy is a member of a relatively small local cluster, all hurtling through space at a velocity of around six hundred kilometers per second. Current theory holds that the extraordinarily rapid motion of these massive bodies is caused by the gravitational pull of a very large concentration of mass situated a great distance away. This "Great Attractor," as it is called, is thought to be another, incredibly vast cluster of galaxies, a kind of supercluster situated millions of light years distant. These greater galactic "cluster cells," varying so dramatically in size and luminosity, indicate that the expanding universe is far from symmetrical, that its "body," like yours, is lumpy and uneven and much more structured than had previously been thought.

Astrophysicists have now discovered the "seeds" of these structural characteristics in slight fluctuations in the cosmic background radiation, which suggests that they must already have been present in the fabric of the universe as little as 300,000 years after the big bang. These early seeds were the primordial imprints of creation, "cosmic genes" in which were encoded all the characteristics of the universe as it exists today.

Science currently recognizes four fundamental forces in the universe: the weak and strong nuclear forces, the electromagnetic force, and the gravitational force. An instant after the big bang, however, there was only one unified force: matter was indistinguishable from energy, and the first rudimentary quanta—the quarks—had not yet been formed. These high-energy conditions at the very beginning of time are now the focus of much attention. Scientists believe that a fuller understanding of the nature of universal origins will come through a rational convergence on the first moments after this unique moment of "conception," when only one unified force existed and where the laws and the components of the universe were much simpler than they are today.

In his book *Wrinkles in Time*, George Smoot uses an interesting analogy to describe the nature of his work. He compares the quest to understand the origin of the universe by converging on the moment of creation to that of tracing the evolutionary development of the human being back to his or her origins. The human being is an immensely complex entity with definite and unique physiological, emotional, and psychological characteristics. But if we trace such an entity back through its life toward the moment of its conception, it appears

progressively simpler in structure, until ultimately we find a uniform set of relatively simple digital instructions encoded within the chromosomes.

Smoot is obviously using this comparison between the universe and the individual only as an analogy, but, like so many cosmologists and astrophysicists today, he seems particularly fond of biological metaphors. For example, he says that "the universe appears to be as it is because it must be that way; its evolution was written in its beginnings—in its cosmic DNA, if you will."[5] He also talks of "quantum self-replication" taking place at an explosive rate very soon after the primordial event, much the same as individual cells self-replicate at an "explosive" rate as a living organism rapidly "expands" after conception.

Another example of the use of "bio-cosmic" metaphor is given by Professor Paul Davies in his book *The Last Three Minutes*, in which he discusses a proposition made by a group of Japanese physicists working on the idea of "false" and "true" vacuums. A false vacuum is an excited vacuum, a region of so-called empty space in which a great deal of quantum activity (particle interaction) is still present. The natural tendency of a false vacuum is to decay to its lowest possible energy state—a true vacuum. The Japanese postulated an alternative process based on a simple mathematical model, where a small bubble of false vacuum surrounded by a true vacuum would inflate and subsequently expand into a larger universe in a big bang. Davies uses the analogy of a rubber sheet (representing the true vacuum of an existing universe) blistering up in a given place and ballooning out to form a "baby universe," connected to the original universe by a "wormhole," the opening of which would appear to an observer in the mother universe as a black hole. The black hole then evaporates and finally disappears, pinching off the "umbilical cord"—the wormhole—leaving the baby universe, a high-energy false vacuum, to grow and develop independently.

Here again we have a scientist using what appears in recent times to have become the accepted idiom for describing cosmological processes—the biological metaphor. Popular books on cosmology and astrophysics now abound with such terms, and one begins to wonder whether this is simply a fashionable trend, or is it, perhaps, some deeper influence affecting the development of human consciousness.

We touched earlier upon the possible nature of this influence, when I proposed that human ideas or inventions could be regarded as the metaphysical equivalent of the amino acid, or perhaps a chain of amino acids. A string of related ideas, which together make up what we would call a full-blown concept (such as the Hermetic Code, for example), we might call a metaphysical "gene," or perhaps a chain of genes. Now genes can be either "dominant" or "recessive,"

active or passive. They can lie dormant in the human genome for generations and they can reemerge once more as dominant genes anytime conditions become favorable.

Perhaps this is what is happening now in respect of the Hermetic Code. It is surfacing once again, and while science has been systematically proving the existence of hermetic symmetries at all levels of material and biological creation, simultaneously there has been a great upsurge in awareness of the remarkable achievements and beliefs of our remote ancestors. Remember, the Hermetic Code has been the dominant feature of human consciousness many times before, in the time of Muhammad, for example, and of Jesus, Zoroaster, Pythagoras, Buddha, Confucius, Moses—the list goes on and on, back into the mists of time. It is entirely possible, therefore, that we are currently witnessing—participating in, even—the beginnings of yet another renaissance in the development of human consciousness, the emergence of a new, "modern" version of the oldest creed on Earth, one that naturally requires us, either consciously or unconsciously, to reinvent the hermetic universe.

Arguably the best example of the recycled concept currently on offer is the theory of universal origins proposed by the physicist Lee Smolin. Smolin has suggested that there may be a kind of Darwinian natural selection taking place among universes and that the emergence of organic life and conscious beings is a by-product of this process. In other words, he is proposing that the universe is a zoon.

Clearly this "natural" conclusion is just about as close to the process I am trying to envisage as it is possible to come, for not only does it agree with the known scientific facts concerning the origin of the universe, it also happens to fit all the criteria of the hermetic view of creation.

We earlier noted Smoot's discovery that galaxies, like stars, are grouped in clusters—cluster cells—and even superclusters. This gives a universal structure and pattern of development very reminiscent of the way living cells gather together in clusters to create a variety of organs, bone, muscle, nerve tissue, skin, and so forth. So perhaps the Great Attractor, the immense supercluster toward which our local group is surging, is an "organ" of some kind in the body of some great being: its "heart," an "eye," or even its "brain." If this were the case, then the relatively small local cluster of galactic life forms, on the back of one of which we are presently riding, might seem lowly and insignificant, but like, say, a blood cell entering into a vital organ of the body, our galaxy would be a contributor to life itself.

THE METAPHYSICAL PERSPECTIVE

Many readers will probably be aware that this hermetic picture of an evolving, organic cosmos is completely at odds with the orthodox scientific version of events, which holds that the universe is essentially an involutionary phenomenon and that, given enough time, all physical systems within it must ultimately descend into chaos. The basis of this assumption is the most fundamental scientific law, the second law of thermodynamics, which says that energy has a natural and irreversible tendency to dissipate. This is what is apparently happening in the universe all the time, where high-density pockets of energy are unevenly distributed, mainly in stars, but also in planets and interstellar space. All this energy is continually dispersing, and on our own planet this is what provides the impetus for all the chemical reactions that make life possible.

Unlike closed physical systems, which simply "waste" their energy, biological systems are highly organized entities, continually evolving into states of ever-increasing complexity. They are intelligent, in tune with their environment, and so are capable of "exporting" entropy (disorder, chaos) and of bringing in energy from outside themselves to sustain their own regenerative and creative processes. As a cell grows and ultimately self-replicates, it is continually taking in energy from its environment and using it to manufacture essential biomolecular components. Similarly we ourselves take in "free energy" in the form of food, air, impressions, light quanta, and so on—all of which are residual products of the greater, entropic movement of a thermodynamic universe. Thus, say scientists, organic systems do not actually violate the law of thermodynamics; they are simply able to temporarily evade the overall degenerative process as and when physical conditions are favorable. So we are all, in a sense, living on borrowed time. When the primary source of our energy —the sun—begins its inexorable descent into chaos, life on Earth will become history. Life in time, that is.

But what about the proposed higher forms of "life" discussed earlier? What about all the solar beings in all the galaxies and all the galactic life forms existing throughout the entire universe? Surely such entities, once created, would continue to exist and to evolve over billions of years irrespective of the dissipative physical energies harnessed in a given, isolated planetary system. Thus the heart of the solar cell— its sun—may die, but its "higher self," or the creative "genes" synthesized during its lifetime, must live on in the greater galactic scale. We earlier ascertained that solar and galactic helices, if they are a reality, would exist in other, greater dimensions—on the plane of light, for example, or in the quantum field—where there is no time as we know it and therefore no frame of reference within which to define a degenerative dispersal

of energy, an increase in entropy. This would explain why a photon can travel across the entire universe and still maintain the maximum velocity possible—because at the speed of light it is free from the ordinary ravages of time.

Clearly, therefore, there could be processes in the universe that continue to unfold irrespective of the directional flow of time. What is more, if these higher organic life forms do indeed exist, and all solar and galactic systems are by and large becoming more and more "conscious," then we might say that the overwhelming tendency of the greater universe is to become less and less "chaotic" as it evolves.

In *The Infinite Harmony* I suggested that the human animal, composed of billions upon billions of cells, is, in effect, a universe in miniature, whose highly organized structures and functions are created from the coordinated activity of a host of chromosomes, or microcosmic "galaxies." Such a body is conceived and then born, after which it grows through successive stages of development until it reaches maturity. Ultimately it gives up the ghost and subsequently releases its component particles, through natural decay, back into the entropic void. It is, however, possible for the human being's emotional, psychological, and spiritual output to continue long after the body has passed its prime and begun its inexorable descent back into the ocean of chaos. Furthermore, even when a given individual is defined as "dead," though virtually no trace of his or her physical existence remains in space and time, the overall influences generated during his or her planetary existence—ideas, impressions, concepts, and so on—can persist, as in the well-documented cases of history's major religious figures, for millennia. In a sense, these influences exist independently of the ordinary time of the individual, whose life span is measured only in decades.

Obviously, therefore, if the universe is alive, then presumably what is being observed through the eyes of astronomers and astrophysicists represents only its physical body developing in time. Its higher conscious functions, that is its "emotional," "psychological," and "spiritual" worlds, would be invisible to us, ostensibly because such processes would be operating in spheres that reach way beyond the boundaries of the physical body, in the realms of the other realities already discussed, in which statistical notions of space and time lose all meaning.

These "spheres" and their respective boundaries are the subject of the next chapter. We have already divided the cosmos into four fundamental scales or orders of "intelligence": DNA, the human brain, the solar helix, and the galactic helix. But it is possible further to integrate these four scales into a more comprehensive cosmic picture by considering them in respect of another essentially hermetic concept, based on the assumption that the hermetic universe,

a four-centered, living entity, exists and operates within an overall framework of seven interpenetrating dimensions.

12

Inner Octaves

By this stage readers will appreciate that the universe may have many more facets than science currently allows. No longer do we see it as simply a four-dimensional phenomenon involving according to thermodynamic principles; it has now become a vibrant, essentially six-dimensional entity, possibly teeming with innumerable kinds of lesser six-dimensional life forms. These various life forms, as we have noted, occupy various scales of existence on the evolutionary ladder, beginning at the level of DNA and culminating at the scale of the galactic helix, all of them coexisting within a framework of seven dimensions.

Now, this ascending "ladder" is not simply a progressive chain of separate rungs placed one on top of another. If the whole universe is a living entity, this means that it is a fully synchronized body, the vibrations of all scales interpenetrating and reinforcing one another strictly according to the dictates of the grand design. We might best view this evolutionary phenomenon as a series of seven pulsating spheres of vibrations, each being contained within the one above it, all of them sharing the same central point.

For example, linear DNA contains within it the whole atomic scale, an infinity of "points," or an endlessly variable sequence of nitrogenous base pairs, each consisting of a few fundamental atoms. But it also contains within it the seeds, or genes, of the greater scale above; it is the blueprint, the recipe, for the creation of the entire organism. In the same way the organism of the human being contains within it the whole DNA scale, an "infinity" of biomolecules, and also, one assumes, the seeds or genes of the greater solar body above. We can imagine the same process repeating itself up through the galactic scale, to the ultimate, Absolute scale.

The hierarchy of dimensions is also integrated in the same manner. A one-dimensional entity—a line—contains within it an infinite number of zero-dimensional points and is a cross-section, a blueprint, of a greater plane; a plane is comprised of an infinite number of one-dimensional lines and is a cross-

section of a greater solid; and a solid, in a similar fashion, contains within it an infinite number of two-dimensional planes and is a cross-section of a greater four-dimensional entity existing along the line of time. Exactly the same pattern would repeat itself in the metaphysical scales above, where the four-dimensional line of time encompasses all three-dimensional possibilities, the five-dimensional plane of light all four-dimensional possibilities, and the six-dimensional "solid" form of the ultimate reality embraces everything: points, lines, planes, solids, time, eternity.

Such a view expresses above all the holistic nature of the universe, on which we shall be concentrating in the following two chapters. We are now familiar with the idea of the complete interconnectedness of everything, a principle that mystics and yogis have intuitively understood for thousands of years and which scientists of the twentieth century latterly discovered through the so-called nonlocal quantum correlations existing between widely separated particles. But is there a way in which this somewhat tenuous and abstract reality can be better understood? That is, if the entire universe is a nonlocal arena of interpenetrating and mutually interacting vibrations, how might such an all-encompassing process work? For example, how can vibrations or wave/particles in one part of the universe be simultaneously "in tune" with vibrations light years away? Or, alternatively, how could the conscious mind of the mystic or the shaman or the LSD tripper connect with a nonlocal reality?

In chapter 8, we noted that musical theory itself provided at least part of an explanation for simultaneity, whereby the ultimate note of any given harmonious scale can at one and the same time exist in other scales, above and below. But can we determine what kind of mechanism allows these vastly different scales to be so intimately linked?

As it happens, we can. And, not surprisingly perhaps, we need look no further than the theory of transcendental evolution, the "theory of everything," for a major clue. This is the sacred number 64, the number of infinite harmony, the key, as it were, to infinity. Primarily associated with the Great Pyramid—a monument dedicated to light, or "lightsmeasures"—the number 64 tells us that an octave of light is further subdivisible into eight inner octaves.

Just for the record, this concept of inner octaves—an outline of which follows in a moment—did not come to me directly as a result of my preoccupation with the Hermetic Code. In fact, I first came across it several years before I fully realized the Code's significance. My source at that time was Ouspensky's *In Search of the Miraculous*, the record of lectures given by George Gurdjieff in Moscow and St. Petersburg at the turn of the twentieth century. As I said in the introduction, Gurdjieff always claimed that his system of knowledge was drawn

from teachings reaching back into the remotest antiquity, but even after reading everything written by or about him it was some time before I made the connection and realized that the principle of inner octaves is in fact very neatly embodied in the Hermetic Code, the oldest recorded teaching on Earth.

Gurdjieff tells us that all matter vibrates, resonates within, in the form of octaves. Normally, when we speak of matter, we are referring to phenomena of substance, things we can touch, see, or measure through some form of scientific method. According to Gurdjieff, however, the property of materiality spans the entire universal spectrum. “Everything in this universe can be weighed and measured,” he said, “The Absolute is as material, as weighable and measurable as the moon, or as man.”[1] The higher orders of materiality, however, are much too rarefied to be regarded as matter from the point of view of chemistry or physics; matter on a higher plane is not material at all for the lower planes, but it permeates them nonetheless.

In his lectures, Gurdjieff often referred to a cosmological model known as the “ray of creation,” which, he said, belonged to ancient knowledge. Basically, it was an elementary plan of the universe, beginning with the highest “world order” and ending with the lowest, so:

1. Absolute
2. All worlds
3. All suns
4. Sun
5. All planets
6. Earth

7. Moon

As we see, the ray of creation, like the hierarchy of dimensions already discussed, represents seven planes in the universe, seven worlds, one within another. (Pythagoras, incidentally, expressed this same view through his geometrical symbol known as the Lambda, comprising seven concentric circles.)

Gurdjieff then described this descending octave, or order of worlds, in terms of the cumulative effect of the law of three forces at each successive level. In the world of the Absolute, the three forces, being harmoniously related in the fullest sense, constitute one whole. The Absolute world is therefore designated by the number one.

In a world of the second order (all worlds), the three forces are already

divided. Such a world would be designated by the number 3. These three divided forces, meeting together in each of these worlds, create new worlds of the third order (all suns), each of which manifests three new forces of its own, so that the number of forces operating within them will be six. In these worlds are generated worlds of the fourth order (the sun), in which there operate three forces of the second-order world, six forces of the third-order world, and three of their own, making twelve forces altogether. The process continues, giving twenty-four forces in worlds of the fifth order (all planets), forty-eight in worlds of the sixth order, of which the Earth is a part, and ninety-six in the seventh (moon). It follows, therefore, that the number of forces in each order of worlds, one, three, six, twelve, and so on, indicates the number of laws controlling it. So the fewer laws there are in a given world order, the nearer it is to the will of the Absolute; the more laws there are in a given world, the greater the mechanicalness, the further it is from the will of the Absolute. We live in a world subject to forty-eight orders of laws, that is to say, very far from the will of the Absolute and in a very remote and dark corner of the universe.[2]

Following on from this descending pattern of accumulating laws and forces, Gurdjieff then explains how the materiality of each world order differs accordingly, becoming ever denser as it involves from the Absolute to the moon. All matter, he says, including that of the world of the Absolute, is composed of "primordial atoms." Obviously these "atoms" should not be confused with those described in ordinary physics; rather, they are certain small particles that are indivisible only on the given plane. Only on world 1, the world of the Absolute, are these particles truly indivisible. The "atoms" of world 3 consist of three atoms of the Absolute world and so would be three times bigger and heavier. Again, the "atoms" of world 6 each consist of six atoms of the Absolute—and so on, according to the laws and forces described above, with twelve primordial "particles" constituting an "atom" of world 12 and a corresponding increase in density as we pass further down through worlds 24, 48, and 96. We thus have seven different orders of "materiality" in the universe. Our ordinary concept of one order, said Gurdjieff, just about embraces the materiality of worlds 96 and 48. The substance of world 24, he said, is almost too metaphysical to be identified through ordinary scientific method; and the even more rarefied substances of worlds 12, 6, 3, and 1, have, to all intents and purposes, no identifiable material characteristics.

It is interesting to note here that in the early 1900s when Gurdjieff was giving his lectures, the conventional atom was still the smallest "particle" of matter known to science. But while Gurdjieff was speaking of these still finer substances permeating the material world, Ernest Rutherford was discovering the

nucleus of the atom, Einstein was attempting to show that photons were particles, and Max Planck was in the process of formulating his idea that electromagnetic radiation was emitted by energetic sources in discrete, symmetrical packages called quanta. Later discoveries, such as the existence of neutrons and electrons within the atom, and of quarks literally everywhere, all served to reinforce Gurdjieff's idea that there are finer substances and vibrations permeating the coarser ones. Nowadays, of course, even individual quanta, the tiniest "particles" known to science, are also described as ephemeral, wavelike entities, suggesting the existence of a finer, more rarefied manifestation of "materiality" than even the most minuscule, pointlike quantum.

Clearly the claim that all matter everywhere is actually composed of the fundamental and indivisible particles of the Absolute world has no arguable scientific basis. As Gurdjieff himself said, the substances of the higher worlds have no recognizable or measurable material characteristics. On the possible nature of such materiality, however, we can speculate at least as far as world order 3 (dimension six in the hierarchy), the world of "all worlds."

Beginning with the lowest world order in the ray of creation, the moon, or world 96 (an order of materiality that would also incorporate the interior of planet Earth), we can say that the matter of this world would probably consist for the most part of the heavy transition metals and all the superdense radioactive elements.

The next world order in the ascending scale, represented in the ray of creation by our own planet and its atmosphere (world order 48), would incorporate matter comprising atoms of the lighter chemical elements, ending with hydrogen, the least dense of them all. Accordingly the matter of the world of "all planets," world 24, might consist primarily of subatomic particles. Beneath the "particle," be it photon, electron, or whatever, lies the even more rarefied wave-mode vibration. Let's say that this wave aspect of subatomic quanta represents the nature of the materiality of world order 12, the world of our sun.

We have now come to the outer limits of scientific knowledge. On the reality beyond the wave we can only speculate. Hermetic theory tells us that even finer vibrations exist within these waves. Possibly, therefore, the next order of materiality, that of world order 6, "all suns," is consciousness itself, the "substance" from which, as I suggested in an earlier chapter, all solar helices are constructed. The materiality of the next world order—the scale of the galactic helix—might be defined as a form of superconsciousness (ordinary consciousness squared, as it were), a substance that, if it exists, must be so rarefied that it must forever remain hypothetical. Finally, the materiality of the primordial "atoms" of the Absolute world order, as we might expect, defies all

expression.

We now come to the concept of inner octaves. According to Gurdjieff, each note of any given octave can be regarded as a complete octave on another plane. Similarly, each note of these inner octaves is also a complete octave in another scale—and so on, but not ad infinitum, because there is a definite limit to the development of inner octaves (just as there is a definite limit to the hierarchy of dimensions and the ray of creation). These inner vibrations, said Gurdjieff, proceed simultaneously in media of different densities, continually interpenetrating and interacting with one another. In a substance or medium consisting of, for example, the superdense atoms of world order 96, each of which is a composite of 96 primordial "particles," the vibrations or oscillations active within this medium are divisible into octaves, which are in turn divisible into notes. The medium of world order 96, like a solid piece of wood saturated with water, is also saturated with the substance of world order 48. Now, the vibrations subsisting in the matter of world order 48 stand in a definite relation to the vibrations in the substance of world order 96; each "note" of the vibrations of world 96 contains a whole octave of vibrations in the medium of world 48. These inner octaves, said Gurdjieff, proceed inward to the very heart of all matter. The substance of world order 48 is in turn saturated with the substance of world order 24, so that each "note" in the vibrations of world 48 again contains a whole octave of the vibrations of world 24—and so on through to the final phase, where the substance of world order 3 is permeated with the substance of world order 1, with each note in the vibrations of world 3 containing a whole octave of the vibrations of the world of the Absolute.

As I mentioned before, Gurdjieff always claimed that the original teachings from which his ideas were drawn—including the above description of inner octaves—dated back to very remote times. How far back this teaching actually does go is currently the subject of much heated debate among alternative theorists and orthodox historians, but it was very much alive in Old Kingdom Egypt, as we know from the previously discussed Magic Square of Hermes and its associate number, 2,080, the sum of all the factors from 1 to 64. Obviously 64 is the key. The Greeks, as we know, associated the Magic Square with the Great Pyramid, "The Lights." And light, of course, is an octave of resonance, composed of eight fundamental "notes." According to Gurdjieff, each of these fundamental notes in an octave of ordinary light would contain a whole octave of notes from the scale or world above. As we see, this very principle is precisely encoded in the Magic Square.

Gurdjieff claimed that "objective music" (by which he meant the kind played by such as Joshua and the builders of the Egyptian and Orphic schools, which

allegedly could move mountains of stone) was all based on these inner octaves. Ordinary music, he said, cannot be used to reconstitute matter, destroy, or build up great walls of stone, but objective music can.

The music being referred to here is, I believe, fundamentally psychological music, the music of the mind, the music described by the Hermetic Code and the I Ching, by the Greek and Egyptian mysteries, and, indeed, by the established principles of all major religious disciplines. In Egypt, this "religion," the making of "celestial music," was known as "writing," the sacred art invented by Hermes/Thoth, the art of striking harmonious metaphysical "notes," or thought patterns, up into the stellar scale of existence, into the "heavenly" world inhabited by the gods. We must assume here that this does not mean "writing" in the ordinary sense.

So let us just imagine for a moment that the mind were conscious to the degree that it could generate higher vibrations—inner octaves— that were in tune with solar helices, world order 12 in Gurdjieff's ray of creation.

As I have suggested, this level of materiality would be as fine and as penetrating as the ghostlike wave mode of subatomic quanta, reaching, as it were, beyond the particle itself into the very heart of the electron. It is not too difficult to imagine some kind of process whereby such vibrations, if they could be concentrated or focused to a sufficient degree of intensity, could indeed have dramatic psychic and physical consequences. Theoretically such rarefied "substances" could actually enter into objects—even blocks of the hardest stone —and affect them from within.

No doubt most orthodox scholars will regard such a notion as entirely fanciful, but not, I would hope, all of them. Times are changing, and scientists are today having to rely as much on intuition and instinct as they are on logical cognition in their attempts to come to terms with the baffling nonlocal nature of the multidimensional universe. We might optimistically view this scientific venture beyond the empirical world out into the metaphysical realm of concepts, thought patterns, and vibrations, as evidence of evolution of the transcendental kind, the beginning of mankind's next momentous journey—to the stars. If this is so, then the rationalist, whether knowingly or unknowingly, may now be contributing actively toward this ultimate flowering of human consciousness.

Take the ideas of David Bohm, for example, the "orthodox" scientist mentioned in chapter 4, whose investigations into plasmas led him to conclude that the electron is a "mindlike" entity. We may recall that he felt instinctively that the "plasmon"—the electron sea—was alive, with billions of individual electrons simultaneously engaging in a mass, instantaneously coordinated action. This implies that electrons are somehow able under certain conditions to

“connect” with every other electron, and Bohm recognized that the nonlocal nature of interactive quanta could account for this kind of synchronized activity.

Impressed by the evidence for nonlocality, Bohm went on to develop what at first appears to be a revolutionary new view of the universe. He suggested that the whole of reality was like a living hologram, a “holomovement,” and that what we see through ordinary methods of investigation is something like a frozen holographic image, behind which lies a much deeper and more meaningful level of reality. Now this idea may be new to science, but it is revolutionary only in the sense that it has turned full circle: it has been held before. In fact, this “holographic principle,” as we shall see, is basically an updated scientific description of the mechanism of inner octaves and of the principles of musical theory.

17

“Al-Chem”—the Egyptian Way

Exactly how the Egyptians of the Old Kingdom attained such a high degree of physical and mental development is, of course, a matter of conjecture. My own view, discussed in some detail in *The Infinite Harmony*, is that they did this by following to the letter the original precepts of Thoth, a doctrine that describes a process of self-development enacted according to musical principles, resulting in the creation of a very special type of individual. However this may have been conducted in practical ways, it is clear that the system employed by the ancient Egyptians really worked, for these people succeeded in uniting harmoniously like no other nation in history. They were, as the Greeks would have termed it, homonoic in the fullest sense, people entirely of one mind, singularly dedicated to the task of transmitting their highly advanced knowledge out into the collective consciousness of the whole of mankind. And in this, as history bears witness, they succeeded admirably, for the Hermetic Code itself, the symbolic key to the Egyptian view of creation, subsequently became the blueprint from which all of the major religious doctrines of the world have been drawn.

Historians tell us that to the ancient Egyptians religion was an entire way of life, a mode of being quite unlike any code of conduct practiced today. The concept of an afterlife, of an existence in the celestial home of the gods, was very much more than just an imaginative belief system sustained by blind faith and primitive superstition. To these people, the afterlife was an attainable reality, one that could be realized by following the primary example of Osiris and Thoth and the many other deities described as the founding fathers of Egyptian culture and religion.

The symbolism invoked in the myth of the Judgment Hall of the Dead, in which Thoth/Hermes is a pivotal figure, explains the Egyptian concept of individual harmony as a passport to the afterlife very clearly.

In the collection of papyri known for convenience as *The Egyptian Book of the Dead*, it is said that the ka, or the spiritual double of the deceased, wanders through the darkness of the underworld in search of the Judgment Hall and takes

on the name of Osiris in the hope of being restored to life, like Osiris himself. The subject then enters the vast Judgment Hall, where Osiris, described as having ten times the stature of the dead man's spiritual double, sits ready to oversee the proceedings. Between them is a giant pair of scales. Subsequently Anubis, the jackal-headed god (usually associated with Sirius, the "Dog Star"), and the hawk-headed Horus, son of Osiris (associated with the sun), wait to superintend the ritual. Thoth, the ibis-headed scribe (whose symbol is the moon) stands in attendance ready to record the result.

As we see, the symbolism described so far is unmistakably hermetic, an expression of the universal law of triple creation, the same law that was later encoded in toto in the later Revelation of St. John, who depicted the Woman in Heaven, the queen of creation, wearing a crown of stars (Anubis), a robe fashioned from the fabric of the sun (Horus), with her feet resting squarely on the moon (Thoth).

To continue with the underworld ritual, a single feather, symbol of the goddess Ma'at, whose name means "truth," is then placed on one pan of the scales, and the dead person's "heart" on the other. Only if the two pans remain perfectly balanced, that is, only if the individual's "heart" is in perfect harmony with Truth/Ma'at, can the ka win the favor of Osiris and ultimately achieve immortality.

So this concept of universal harmony describes the principle of acting out harmonious sequences of conduct and development in space and time. This was the central theme of the "Egyptian way": the science of music, of alchemy, the way of the gods. As we have noted, this "way" was reflected quite clearly in the three major creation myths of the Old Kingdom, Memphite, Hermopolitan, and Heliopolitan, which all describe the miraculous appearance of an enlightened group of eight principal deities. Exactly the same underlying format, namely the octave, was also the basis of the annual performance of the sacred Osirian mysteries, the first "passion play," traditionally reenacted in the form of an eight-act drama. Indeed, it is very likely that everything the Egyptians did, whether building pyramids, enacting sacred rituals, or simply walking down a causeway, was invariably performed to the accompaniment of this universal music.

Even to this day, many orthodox Egyptologists still refuse openly to admit that the *pi* symmetry was known and used by the ancient Egyptians. In fact, we have persistently been told that they had no mathematics as such—a claim that might seem hard to reconcile with the absolute geometrical symmetry and precision of the Great Pyramid and with the exact mathematical relationships evident in the King's Chamber and the granite sarcophagus. Curiously, the

dimensions of the Great Pyramid yield proportions with a value closer to "mathematical" *pi* (3.14159) than to the "classical" approximation (3.142857 rec.). However, with the original casing blocks now missing, and the whole structure shaken by a major earthquake several hundred years ago, it is impossible to determine whether the original angle of slope was intended to express the more accurate mathematical value of *pi* or its symbolic equivalent.

In any event, it was the classical convention that played the key role in Egyptian metaphysics. As we have seen, the Egyptian "model of the gods" was based on the phenomenon of light itself (after which, remember, the Great Pyramid was originally named), which modern science has since shown to be an electromagnetic manifestation of *pi*. It is an octave of resonance, with eight fundamental divisions in its overall structure: red, orange, yellow, green, blue, indigo, violet, and, of course, the transcendental white. But it also has three "primary" wavelengths: red, yellow, and blue, frequencies that make it possible to subdivide further this fundamental octave into three subsidiary scales, that is into a tripleoctave format. Therefore *pi*, like light itself, is everywhere.

And so this universal symmetry—the Hermetic Code—was seen both as a model of perfection and as a description of a precise mode of being, an essentially musical system of conduct through which consciousness is, in effect, able to complete the course of its development and so transcend onto higher dimensions, greater "scales" of psychological "resonance." We have already noted a practical application of this "music in action" in the records of Old Kingdom administrative procedure, where the vizier to the pharaoh, the high priest and keeper of the mysteries, was given direct control over all twenty-two "nomes" (districts) of Upper or Southern Egypt, while his deputy, still perhaps undergoing various intermediate stages of initiation, was given subsidiary control over just seven nomes.

This unique "musical" relationship between the two priests is particularly interesting, because it brings us back to an idea discussed in earlier chapters, in which I proposed that all creative processes, whether they occur below in the microcosmic world of the self-replicating cell, or above in the double helix of the mind of the shaman or master mason, are, in fact, organic in nature. Remember, hermetic is genetic. It follows, therefore, that the process of passing on knowledge from one individual to another, from teacher to pupil, master mason to apprentice, was, in a very real sense, an organic system, one that involved disciplined, harmonious conduct and, of course, the subsequent systematic dissemination of the "immaculate" concepts by which they were guided. Being, as it were, "psychologically sound," these original concepts were quite naturally replicated faithfully, "religiously," in every succeeding

generation. Thus, despite two interim periods of destructive social anarchy, the Egyptian way of life continued virtually uninterrupted for three long millennia. This longevity, I believe, is the result of what is, in reality, an organic process, whereby the original, highly potent ideas of the gods of the First Time, exactly like successful genes in the biological heritage of dominant, evolving species, were repeatedly and faithfully "copied" in the evolving metaphysical "gene pool" of the collective Egyptian psyche.

We know that in the natural course of Darwinian evolution successful genes can survive all manner of catastrophes: ice ages, rapid meltdowns, deluges, earthquakes, cometary impacts. In the same way, the hermetic ideas we are dealing with here—the metaphysical equivalent of successful genes—have survived all kinds of social upheaval: wars, dark ages, periods of total ignorance and barbarism, inquisitions, revolutions, and so on. Therefore we are not speaking in metaphor: we are talking about organic processes of creation and evolution, both microcosmic and macrocosmic, which are identical in every way, with a difference in scale only. This, of course, is precisely what is being referred to in the hermetic dictum quoted many times before: "As above, so below." We can take this quite literally: the genetic code of the microcosm is the medium through which greater organisms evolve, and exactly the same pattern is repeated in the "cosmos" above, where the Hermetic Code describes the process by which consciousness grows and develops. There is a passage in a collection of post-Christian texts known as the Corpus Hermeticum that comes close to expressing the same idea. The god Thoth is here speaking to his son, Tat: "My son, Wisdom is the womb, conceiving in secret, and the seed is the true good."[1]

As I have said, I believe that practically everything the Old Kingdom Egyptians did was performed to the accompaniment, so to speak, of the esoteric music composed by the founding fathers of Egyptian culture, the so-called gods of the First Time. This implies, of course, that the entire Great Pyramid construction project itself was also conducted in accordance with the same principles. In other words, the whole project must have developed organically, which is to say that the Great Pyramid in effect "grew" out of the collective efforts of these very special people. We know that living organisms developing from microscopic embryos increase their bulk and complexity exponentially, two cells dividing into four, four into eight, and so on. Possibly, therefore, the building of the Great Pyramid began relatively slowly at first but, as the construction workers became more and more adept at their craft, more "in tune" with the tasks in hand and with one another, the rate at which the blocks were laid down would have increased accordingly, perhaps building up to a final crescendo of activity of a kind that we today can barely imagine. Indeed, were it

not for the hard stone evidence at Giza staring us in the face—nearly two and a half million pieces of it—most people of a rational turn of mind would consider such a feat improbable, at least within the time span allowed by orthodox Egyptologists.

We have already established that the exact number of years taken to enact this remarkably harmonious performance is unknown, as indeed are the methods used, so it is not possible to explore an incidental pet theory of mine, which is that there might have been some sort of correlation between, on the one hand, the successive stages of construction and development of the structure and, on the other, the harmonic ratios of musical theory. Nevertheless, if the whole project, from start to finish, is viewed—as the Egyptians viewed almost everything—as a hermetic phenomenon, then we can say that the Great Pyramid itself, the first and foremost of the seven wonders of the ancient world, also represents the final "note" of the completed scale of enactment. And the final note of any major scale, as we know from musical theory, has transcendental properties, because it is also the first note of the greater scale above. In exactly this way, the Pyramid of Khufu/Cheops can in fact be regarded as a genuine transcendental phenomenon, whose universally harmonious proportions and alignments are, even today, five thousand years after they were created, striking strangely familiar chords in the minds of anyone prepared to take time and listen.

So we see that the Great Pyramid is in reality much more than a mere building. It is a life-bearing, organic phenomenon, an "immaculately conceived," metaphysical "gene strand" of extraordinary resilience and potency, in which is encoded the secret of life itself.

I certainly don't expect a favorable response from the orthodox Egyptology establishment regarding my musical/organic interpretation of the "Egyptian way." But this does not concern me unduly. The important point is to get one's ideas aired, to "sow the seeds," and then let nature take its course—a process in which I have a great deal of faith. If one ends up as no more than a weed in Eden, there is still the possibility of a flowering of some kind. Surely this is better than sowing nothing at all.

So, while I may not be "in sync" with orthodoxy—or even, for that matter, with the ill-defined group of "New Age" thinkers at the cutting edge of the Great Debate—everyone seems to agree on one fundamental and very important point, which is that the Egyptian civilization was unique and very special. Even orthodox historians are given to using superlatives and poetic metaphor to describe the works of the first masons of this remarkable culture.

John Romer, for example, one of the most respected authorities on ancient Egypt, describes the pyramids in a way I find particularly apt in respect of the

ideas discussed in this book: “the nuclear reactors of ancient Egypt, the throne of the sun itself.”[2]

In a sense, of course, there is more truth in this statement than Romer himself would care to acknowledge, for the Great Pyramid— “The Lights”—is indeed a nucleus of creative, intelligent data, an undiminishing beacon, whose illuminating beams of metaphysical “light” are, even to this day, radiating constantly out into the darker world of the ordinary human psyche.

As suggested in a previous chapter, the Giza necropolis was designed as a mirror image of the sky above the Nile Delta, and the Great Pyramid itself, as well as being the repository of the wisdom of Thoth, also functioned as a kind of ceremonial launchpad for the ascending, star-bound soul of the initiate. This vital connection with the heavenly sphere, the stellar scale of existence, is generally accepted by everyone. Romer himself expresses it: “By piling form on form the Egyptians had created a shape so dramatic that, in unison with its commanding position at the horizon, it joined heaven to earth, earth to heaven.”[3]

In certain texts, the pyramids are sometimes referred to as the “Mounds of Horus”—an understandable name, given the fact that Horus himself was essentially a solar deity. There is one verse of the Pyramid Texts that describes how Horus, Osiris, and other mythical deities first initiated this whole process of transcendental evolution. “There come to you . . . the gods who are in the sky, and the gods who are on earth. They make support for you upon their arms; may you ascend to the sky and mount upon it in this its name of ‘Ladder.’”[4]

The “Ladder” in question is, of course, the ladder later perceived by the Hebrew Scriptures patriarch Jacob, the “rainbow covenant” of the Israelites, the phenomenon of light.

The Egyptians, it seems, had realized long ago that light is the vehicle of consciousness, the medium through which the mind is able to transcend on to the stellar scale of existence. As I have said, they did not simply believe that this was so; they knew it, because they had firsthand experience of heaven. How else could they have possibly come to terms with such mind-boggling concepts as timelessness and infinity, concepts that, even in the earliest periods, were an integral part of Egyptian metaphysics, as the passage quoted in chapter 2 from the Old Kingdom poem referring to the godking clearly shows: “His life-span is eternity, the borders of his powers are infinity.”

It should be noted that the relatively recent ancestors of the author of this verse were supposedly primitive farmers, and that Egyptian civilization at this time was allegedly barely a couple of centuries old—younger, in fact, than our own. Yet here we have a scribe contemplating ideas of such an exalted and

sophisticated nature that, were you to attempt to discuss them today with your neighbor, you might predictably be met with, at best, a glazed expression. Curiously however, in scientific circles— among quantum physicists, astrophysicists, and the like—such concepts as eternity—a timeless dimension—and the infinite, spaceless realm of the nonlocal, quantum field are common currency. Similarly, if one were able somehow to travel at the speed of light and so see the world through the "eyes" of the Holy Ghost—the photon quantum—the "heavenly" realm of the Egyptian godking would spring magically into view. Time would be perceived to dissolve into eternity, and space would enfold into a nonlocal world of the kind observed by Ouspensky, with no borders, no "sides" to it.

Another significant feature of Egyptian metaphysics that has a distinctly modern ring to it is the idea of the constant squared being the key to all creative processes. In chapter 5, I discussed briefly the mathematical trick devised by Einstein's one-time tutor, Herman Minkowski, by which he used the value of the square of the constant (speed of light) as a means of determining the amount of pure energy stored in any given mass. As we have seen, this idea seems to have been uncannily foreshad-owed by Egyptian metaphysicians, who associated "The Lights"—the Great Pyramid—with what was to become known in Ptolemaic Egypt as the Magic Square of Mercury and the number 2,080, the sum of all the numbers from 1 to 64. Sixty-four is the square of the constant number, 8, the number of full notes in the major musical scale and the number of gods involved in the early myths concerning creation. And today, of course, we find that sixty-four also is the maximum number of RNA triplet-codon combinations comprising the genetic code, the symmetry employed by DNA in the creation of all known forms of life. Furthermore, it is surely no coincidence that the Hermetic Code itself, the classical convention 22/7, can be further subdivided into three inner formulae, thus producing from the original "triple octave" a composite figure of nine octaves, sixty-four notes. As we noted also in chapter 4, this same number has even cropped up in the superstring theory of subatomic quanta, which are described rather mystifyingly as one-dimensional "strings" of vibrating energy, and which are theorized as having 64 degrees of movement associated with them.

The number 64 appears also in other ancient number systems. In the tarot for example, there are fifty-six Minor Arcana cards (the number cards) and twenty-two in the Major Arcana (the picture cards). The Major Arcana is a symbolic representation of the triple octave, an expression of the formula *pi*. And according to the law of octaves, this triple octave is also, on another scale, a single octave comprising eight fundamental notes. If we subsequently add these

eight fundamental notes on to the Minor Arcana figure, we are left with the magical sixty-four. Then we have the I Ching, of course, which I discussed in the introduction of this book—an exact blueprint of the genetic code itself, with its sixty-four hexagrams and eight fundamental trigrams. Another interesting example is the old British measure of ground area—the acre—640 of which constitute a square mile.

In the last chapter I mentioned the "golden mean" proportion, denoted by the Greek letter phi, which naturally occurs in the relationship between the Great Pyramid's base and the length of its apothem or slope; that is, half the base length is in the ratio 1:1.618 with the length of the apothem. Like *pi*, phi is a naturally occurring ratio. It is expressed in a well-known series of numbers known today as the Fibonacci series, named after the thirteenth-century mathematician who first noted them. Each number in the series is the sum of the two preceding ones, like so: 1 + 1 = 2, 2 + 1 = 3, 3 + 2 = 5, 5 + 3 = 8, 8 + 5 = 13, followed by 21, 34, 55, 89, 144, 233, and so on to infinity. If we divide any given number with the one preceding it, an approximate value for phi is obtained, which is usually rounded off to 1.618. So, for example, 233 divided by 144 gives 1.618055555556. The higher the numbers used, the greater the accuracy obtained for the value of phi.

We noted previously how this proportion has a distinctive aesthetic quality when incorporated in architecture, of which the Parthenon and the Great Pyramid itself are the best-known examples. But there is also another significant aspect of the golden mean proportion, one that has a direct bearing on the central theory of this book. It seems that phi, like *pi*, also manifests in the natural, organic world, the world created by the genetic/Hermetic Code. As examples of this, we see the developmental stages of the spiral seed-patterns of the fir cone and the sunflower. Any two of these stages taken together always correspond with two consecutive numbers of the Fibonacci series. The same is true of the spiral growth pattern of the nautilus shell. The point is that this phi relationship as it manifests in the organic world is intrinsically connected with the growth and development of spirals, helices, of which the most prominent in the whole of nature is, of course, DNA. And DNA, remember, is composed of precisely sixty-four components. We should note also that all of the other "life forms" discussed in previous chapters—principally the four-dimensional structure of the human brain and of the "solar" and the "galactic" helix—are all spirals. Possibly there are harmonic geometrical and mathematical patterns in the development and growth of all of these helical structures, but this is a question that requires more space to investigate than I can currently afford.

For me, I think the most impressive feature of this Egyptian world-view, of an

infinite realm inhabited by the gods above, is the fact that these people appear to have actually devised a way for individuals to experience this alternative reality for themselves, to become "gods" in their own right. We are referring here, of course, to the way of the alchemist described by the theory of transcendental evolution, a theory based on the concept of harmonizing one's inner faculties according the principles of musical theory, and of striking metaphysical "notes" up into greater "scales" of existence.

Surely even the most skeptical observers would have to admit that the formulation of an idea as farreaching as this, one that has practical as well as theoretical applications, is in every sense a remarkable achievement. Indeed, as I said in my last book, the Hermetic Code itself is possibly the brightest idea ever conceived by man, the original "immaculate conception." As such, this concept represents an intellectual advancement of utterly staggering proportions, one which, in terms of the kind of natural selective evolution envisaged by neo-Darwinists, can accurately be described as a genuine macromutation of the hominid mind.

To summarize: in my view the Egyptians of the early dynasties were a giant of a race, people who walked the earth with their feet firmly on the ground, but whose minds and spirits knew no physical boundaries. They existed in the infinite cosmic ocean; they were "quantum tunnellers," "superconductors," denizens of the plane of light above and of the quantum field—the "underworld"—below.

And their secret? How did they gain access to the nonlocal dimension so effectively? How did they become conscious to such a degree that they were able to see the universe from all sides at once, from above and below, inside and out?

The myths tell us quite clearly that they did this by adopting the harmonic principles of music as a code of conduct, a systematic, "religious" method of harmonious psychological development, the original tenets of which were ingeniously encoded in the "immaculate" *pi* convention. This, surely, is the mother and father of all disciplines. It is alchemy, the "Egyptian way," the science of the followers of the enigmatic Osiris and Thoth, civilizers of "the First Time," who taught that all creative, life-bearing processes, including the ultimate flowering of human consciousness, are products of the action of the forces described by the two fundamental laws of nature—the law of three forces and the law of octaves. The law of three, as we have seen, states that everything created is the result of the action of three forces: active, passive, and neutral. This is, I think, precisely what lay behind the symbolism of the three major deities of the Egyptian pantheon, the origin of the all-embracing trinity, with

Osiris (male, active), Isis (female, passive), and Horus, the law-conformable (neutral) product of the union of the first two. The second fundamental law, the law of octaves, states that all things created are composed within of eightfold symmetries— hence the broader Egyptian pantheon of eight principal gods, said to have appeared simultaneously (nonlocally?) on the fabled "Island of Flame."

THE FINAL ANSWER

The Egyptians are believed to have had a national motto, which inLatin *translates as memento mori*, "remember you must *die*." The word die is generally taken literally, but I suspect that there was more to it than that. After all, these people did not believe in the total extinction of the human being. They believed fervently in a life after death, a life among the stars, with Osiris, Isis, Horus, Thoth, and all the rest. So why did their national motto not reflect this belief? Why not "remember you can live forever?" One can only assume that these people did not need reminding of what to them was the self-evident reality of the afterlife. Old Kingdom Egyptians were almost totally preoccupied with it, as the myths and the precise, star-bound alignments of their architecture clearly show. The reference to "dying," therefore, may have some other, more esoteric meaning, and I suspect that this was precisely the same meaning as that alluded to in the passages from Gurdjieff's book of aphorisms mentioned in the last chapter, one of which read, "When a man awakes he can die; when he dies he can be born." *Memento mori*, therefore, was probably intended to remind initiates not of their mortality, but of the way in which immortality can be achieved; that is, by dying to the illusory, material world, by regularly adopting a passive role in the cosmic scheme of things. There is a well-known biblical quotation that expresses the very same principle: "Except a corn of wheat fall into the ground and die, it abideth alone; but if it die, it bringeth forth much fruit." The organic inference here is particularly appropriate, because genetic processes, as we have seen, are hermetic; therefore "fruits" of any kind, whether above in the mind or below in the living cell, are created in exactly the same alchemical way.

So "dying" in life (meditating, making oneself receptive to greater cosmic influences) was seen as a way of preparing individuals for death as we think of it, a natural event, which to the Egyptians was seen not as a terminal event but rather as an organic transition in an ongoing evolutionary process. We might call this transition a macromutation of the human spirit, an ultimate, mind-altering metamorphosis, through which consciousness transcends on to an infinitely greater scale of existence. This is the scale alluded to in the symbolism of the

two-winged caduceus, the magic wand of Hermes, a graphic representation of the greater "double helix" in the sky. This principle is clearly expressed in this verse from the text known as the Corpus Hermeticum:

> Do you not know, Asclepius, that Egypt is made in the image of Heaven, or so to speak more exactly, in Egypt all the operations of the powers which rule and work in Heaven have been brought down to earth below? Nay, it should be said that the whole Cosmos dwells in this land and its temples.[6]

So the Giza necropolis was designed as a kind of mirror image of the Egyptian Duat, of the sky, principally to emphasize humankind's star-bound destiny. It is significant that the word *Duat* also meant "underworld." Now, perhaps, we can understand why. Above and below—the plane of light and the quantum field—are one and the same nonlocal dimension. And incredible as it may seem, the Egyptians appear to have been aware of this.

Continuing for the moment with our organic perspective, it is evident that these people somehow succeeded in breaking free from the Darwinian mode of evolution common to all, and quite literally macromutated, evolved transcendentally, into a nation united, into a greater, single, homonoic "organism." What we are trying to envisage here is a kind of metaphysical "chromosome," a living, multidimensional structure, whose life-bearing data—ideas, precepts, concepts, rituals, and myths—were designed or created solely to build, on a macrocosmic scale, even greater organisms, "gods" if you will, "Tetrads in the sky."

We, today, are the inheritors of these metaphysical "genes" and, although our general mode of evolution is characteristically Darwinian—"naturally selective"—I believe that buried within the collective consciousness of the human race there remains an underlying tendency to evolve transcendentally, just as the Egyptians did. As we have seen, these enigmatic people not only evolved into a race apart, they left behind them all the data required for us to follow in their wake. They planted "seeds" as they passed through this world, seeds of wisdom, of symbol, myth, and legend; seminal ideas, which, over the millennia, have periodically germinated and come to fruition, and which today are once again beginning to produce a whole "new" variety of conceptual flora.

Modern science, for example, which seems to me to have been born out of an instinctive need for the human mind to overcome the desolate, stultifying climate of the Inquisition, is now poised to enter its transcendental phase. Accordingly our attention is once again turning to things "above," to the cosmos itself, and to things "below," to the quantum field and the nonlocal realm being explored in scientific communities worldwide.

The early pioneers of the modern scientific movement—Newton, Galileo, Copernicus, Kepler, and so on—began this present phase of metaphysical growth when they started to observe the heavenly bodies and to understand the forces controlling them. The ensuing process of scientific enquiry culminated in the ideas of Albert Einstein, whose own attention was eventually to focus, perhaps inevitably, on the constant light of the sun. In a sense, therefore, through the concepts of this modern genius, the great Egyptian sungod Ra has triumphantly returned, bringing with him a glimmer of understanding, a timely recognition of the eternal, spaceless dimension in which he reigns supreme.

So the ancients' description of the constant realm of the godking, formulated by people to whom, one suspects, "transpersonal experiences" were readily accessible, was subsequently reborn under its modern guise of Special Relativity, the theory that finally turned logical thought upside down, and that ultimately gave rise to the "new" scientific vision of a nonlocal universe.

But, as we have noted, this modern "genestrand" of ideas is actually a mutated form of the original "immaculate conception." In reality the basic components of the Egyptian way, exactly like the dancing genes in the DNA of a newly fertilized ovum, have simply been "jiggled about," but they remain essentially the same components, the same genes. Even in King Solomon's day, it was understood that the esoteric traditions of the Judaic religion were simply echoes of a much older theme: "and there is no new thing under the sun. Is there anything whereof it may be said, See, this is new? It hath been already of old time, which was before us."[7]

Throughout recorded history there have been other, quite distinct, mutations in human thought, characteristic variations in the evolving species of nations. The Chinese, the Indian, Persian, Greek, Judaic, Christian, and Islamic codes of life —all of these metaphysical "creatures" have been born and have thrived in their own day as dominant genestrands. Today these same genes are in a passive or recessive mode; scientific ideas and concepts have now superseded them. It may be argued that the Christian and Islamic traditions are still dominant, active, but I would suggest that this is due largely to extreme fundamentalist elements of a type that Jesus and Muhammad, both of whom were relative paragons of compassion and tolerance, would be unlikely to countenance if they were around today. But, in any event, all of the major religions and esoteric traditions are still there, still alive (literally) in the great gene pool of human consciousness. In subsequent generations they may even become dominant again, may each undergo a sudden resurgence or renaissance, as the human brain continues to develop and to adapt to environmental variables.

The obvious conclusion to be drawn from this ongoing "metabiological"

process of thought is that the ancients had it exactly right, that the entire cosmos —the real universe, as opposed to the four-dimensional physical shadow perceived in our ordinary states of awareness—is indeed a living, breathing creature like you, whose life-blood is none other than consciousness itself. This in turn suggests that the whole universe, like any organic body, is pulsating through-out with life.

Sri Aurobindo said that if a single point in the universe were unconscious, then the whole universe would have to be unconscious. Scientifically we can interpret this to mean that if the "mindlike" qualities of the photon or the electron were removed, if "nonlocal quantum correlations" were to cease, the whole cosmos would become a dark and lifeless void. Fortunately the great ancient sun god is currently alive and well and gloriously omnipotent, and as long as this universal archetype continues to inhabit our dreams and to be the principal vehicle of our perceptions, the human race, it seems, will never be alone.

So it is very likely that science fiction has been nearer to fact than many people imagine and that there are "aliens" out there. If the universe is a zoon, an immense, six-dimensional creature going around by the name of God, there must be. But these extraterrestrials, no matter what form they might take, are our brothers and sisters, metaphysical "proteinbuilders" just like ourselves, created by, and acting under, the direct influence of "gods" of star-strung, serpentine "chromosomes."

Now, here's a thought. If we are ultimately to turn science fiction into reality and communicate directly and coherently with our extraterrestrial counterparts across billions of light years of space, then the connection, one suspects, will somehow have to be made, not through the use of impossible-to-build "warp factor" starships, or hypothetical "wormholes" in the curved fabric of space-time, or even radio waves, but through the metaphysical frequencies of the nonlocal, subquantum ("underworld") channel of communication. The Egyptians, of course, have already made contact with other beings; they have "died" and journeyed to the underworld and passed the ultimate test of truth. And so, too, have all the other remarkable teachers of hermetic wisdom mentioned in this book, individuals whose thoughts, ideals, and concepts still flourish unceasingly in the collective consciousness of the human race as it grows, a shimmering, multidimensional pyramid of resonant data, up toward the heavens. These great souls have already been born into spirit; they are, in a sense, already "out there," communing with the godlike inhabitants of the starry world, waiting patiently for us to join them in the celestial celebration that never ends, a party to which, it seems, we have all been cordially invited.

So when you think you're ready, you might care to rendezvous at the Giza terminal. Even if you get there only in your wilder dreams, it all adds up. The more positive thought patterns we transmit out into the nonlocal energy field (the plane of light, the "book of life"), the more we will ultimately get out of it. Our input, however, if it is to have any lasting effect, will have to be homonoic, that is, conducted through a genuine union of minds. Like the pyramid builders we will all have to pull together and start integrating in a true spirit of cooperation and openmindedness. Presumably the cumbersome ego will have to be completely discarded. Remember the feather on the balance in the Judgment Hall of the Dead, the symbol of Truth. What earth-bound ego could possibly pass such a test of its real substance? None.

So think of the stages of evolution enacted in the metamorphosis from caterpillar to butterfly as the evolving entity sheds its dense, gravity-bound chrysalis and ultimately flies up into the sky, to a new life. Perhaps, through living simply in compliance with the basic laws and forces of nature, this could be you, the eagle-beast of Revelation, soaring to places ordinary mortals can only dream about.

Collectively, as the human race fast approaches the new precessional Age of Aquarius, we are facing a crucial and momentous decision: either we evolve in harmony, transcendentally, united as one, in a higher dimension, a greater scale of being, or we remain fragmented, divided, isolated in time and space, a timid, provincial race dead from the neck up, enslaved by economic obligations, eking out a meager existence on a sad little planet littered with fossil dinosaurs, dodos, and countless other extinct species.

For my money, and for the sake of all around me, I feel strongly inclined to go for the former option, to follow in the footsteps of the Egyptian high priest. We can do it if we want to. It is basically a state of mind, but one that, as the concept of the eternal trinity implies, can only manifest through the harmonious interaction of the three fundamental forces of nature: active, passive, and neutral, and in that order. Ordinary thought processes switch from active to neutral and back again, endlessly. In this lies our greatest folly, because the genuine passive element is always absent, which means that the mind is never fully receptive, never able to assimilate external data in sufficient quantities to stimulate growth. Remember the pyramid ritual, the opening of the mummy's mouth at the foot of the southern shaft of the Queen's Chamber, aligned to Sirius, star of Isis, the passive force of the trinity. This is alchemy pure and simple, a description of the vital process of opening the mind, of "waking it up," so to speak. This, of course, is precisely what genuine and sincere prayer, meditation, and numerous other yogic practices were designed to do—to introduce the passive element into the

processes of mind, without which there can be no rhythm, no real harmony. So here's a tip: keep your "sabbath," your period of "rest"—you can't be fully in tune with nature without it.

Significantly, we need only look to the microcosm, to the evolution of DNA, to realize that the Egyptians themselves must have "sung" like proverbial angels, for the "pyramid ritual" is, in fact, performed repeatedly by all chromosomes, the "minds" of the biomolecular world. When the chromosome is ready to act, it first relaxes the tension of one of its two nucleotide chains; that is, it becomes temporarily passive. This, effectively, opens up the double-helix structure, causing the paired bases within it to separate, at which point, something quite "magical" occurs. Free nucleotide bases floating around in the surrounding cytoplasmic membrane are taken in by the chromosomes. The chromosome then combines these bases into "tripleoctave" units—RNA codons, the microcosmic equivalent of concepts—and subsequently ejects them again to carry out a specific evolutionary function, which is to act as templates for the manufacture of amino acids, the building blocks of life.

And what do all self-respecting, self-replicating cells do with these building blocks? They build "pyramids," of course: living ones, immense, six-dimensional organic structures capable of building even greater pyramids . . .

Notes

INTRODUCTION

1. P. D. Ouspensky, *In Search of the Miraculous*, 124.
2. It might be argued that seeing the numbers 7 and 8 as interchangeable makes the identification of patterns too easy, but I think that any "natural" configuration that conforms to this universal symmetry, that coincides at the key "points of entry," as it were (for example, points 3, 4, 7, 8, 22, 64, and combinations thereof)—musical, geometric, genetic, conceptual—is, I think, valid. So the 838 symbolism of the I Ching, or the "chessboard" ground plan of the Giza Necropolis, is essentially expressing the same principle as the 93711 format of the triple-octave "squared," because the product of each is 64. Similarly the number 64 in the genetic code is obtained, not through an 838 format, or 93711, but through 43434—again, with a product of 64. So these apparently disparate patterns do map one onto another, but only at certain crucial points. One would not expect exact superimpositions to be visible at every level, because the universe is continually evolving, constantly in flux. But as long as the various symmetries link in at these main "points of entry" the Hermetic Code is valid. If anything, the fact that the code can be directly linked to all of these various symmetries—and many others found throughout the natural world—is compelling evidence of its extraordinary dynamism and universality. This is precisely what one would expect of a "theory of everything."
3. Michael Hayes, *The Infinite Harmony*, 17.

CHAPTER 1. THE SACRED CONSTANT:THE "JEWEL IN THE CROWN"

1. William R. Fix, *Pyramid Odyssey*, 108.
2. R. A. Schwaller de Lubicz, *Sacred Science*, 86.
3. Colin Wilson, *From Atlantis to the Sphinx*, 78.
4. Edouard Naville, "Excavations at Abydos," cf. Corliss, 325.
5. Andrew Collins, *Gods of Eden*, 11.

6. Rand Flem-Ath and Colin Wilson, *The Atlantis Blueprint*, chapter 3, “The Giza Prime Meridian.”
7. Peter Tompkins, *Secrets of the Great Pyramid*, 287–382.
8. Stan Gooch, *Cities of Dreams*, 99–100.
9. Ibid., chapter 10.

CHAPTER 2. A DIFFERENT WAY OF SEEING

1. Colin Wilson, *From Atlantis to the Sphinx*, 9.
2. Colin Wilson, *The War Against Sleep*, 89.
3. Colin Wilson, *From Atlantis to the Sphinx*, 10.
4. A. Erman, *Pyramid Texts, the Literature of the Ancient Egyptians*, 4f.
5. Colin Wilson, From Atlantis to the Sphinx, 242.
6. Ibid., 242.
7. R. A. Schwaller de Lubicz, *Sacred Science*, chapter entitled “Magic, Sorcery, Medicine.”
8. Colin Wilson, *From Atlantis to the Sphinx*, 246.

CHAPTER 3. MUSIC OVER MATTER

1. Carl G. Jung, *Memories, Dreams, Reflections*, 178–79.
2. John Bierhorst, *The Mythology of Mexico and Central America*, 8.
3. Harold Osbourne, *Indians of the Andes: Aymaras and Quechuas*, 64.
4. Mark Henderson, *The Times, February* 16, 2004.
5. Paramhansa Yogananda, *Autobiography of a Yogi*, 316.
6. Andrew Collins, *Gods of Eden*, 66–70.
7. Graham Hancock, *Fingerprints of the Gods*, 262.
8. Andrew Collins, *Gods of Eden*, 82.
9. Ibid., 77–78.
10. Peter Tompkins, *Secrets of the Great Pyramid*, 101–3.

CHAPTER 4. THE ELECTRON AND THE HOLY GHOST

1. Pierre Speziali (ed.), Einstein–Besso Correspondence, 1903–1955, p. 538.
2. Michael Talbot, *The Holographic Universe*, 51.
3. P. D. Ouspensky, *In Search of the Miraculous*, 176.
4. Paul Davies, *Other Worlds*, 68.
5. Timothy Ferris, *The Whole Shebang*, 224.
6. Colin Wilson, *The Strange Life of P. D. Ouspensky*, 54.
7. Ibid., 50.
8. Satprem Satprem, *Sri Aurobindo, or the Adventure of Consciousness*, 219.

9. Paramhansa Yogananda, *Autobiography of a Yogi*, 316.

CHAPTER 5. FURTHER LIGHT

1. Graham Hancock, *Fingerprints of the Gods*, 178.
2. Ralph Ellis, *Thoth, Architect of the Universe*, 3.11.

CHAPTER 6. LIVE MUSIC

1. Michael Hayes, *The Infinite Harmony*, 221–30.
2. Richard Dawkins, *River Out of Eden*, xi.
3. Ibid., 52.
4. Ibid., 33.
5. Richard Dawkins, *The Selfish Gene*, 192.
6. Ibid., 199.
7. Ibid., 197.
8. Michael Hayes, *The Infinite Harmony*, 154–57.
9. Richard Dawkins, *The Selfish Gene*, 196.
10. Graham Hancock, *Fingerprints of the Gods*, 95.
11. James Shrieve, *The Neanderthal Enigma*, 69.
12. Stan Gooch, *Cities of Dreams*, 49–53.
13. Michael Hayes, *The Infinite Harmony*, 27–39.
14. Linda Jean Shepherd, *Lifting the Veil, The Feminine Face of Science*, 215.
15. Richard Dawkins, *River Out of Eden*, 142.

CHAPTER 7.EXTRATERRESTRIAL DNA

1. Rodney Collin, *The Theory of Celestial Influence*, 342.
2. Michael Hayes, *The Infinite Harmony*, 222.
3. Rodney Collin, *The Theory of Celestial Influence*, 81.

CHAPTER 8.INTERSTELLAR GENES AND THE GALACTIC DOUBLE HELIX

1. Robert Temple, *The Sirius Mystery*, 3.
2. Ibid., 55.
3. Ibid., 24.
4. Ibid., 25.
5. Michael Hayes, *The Infinite Harmony*, 81–93.
6. Robert Temple, *The Syrius Mystery*, 28.
7. Ibid., 29.

CHAPTER 9. THE HERMETIC UNIVERSE OF ANCIENT TIMES

1. Genesis 1:1.
2. Ibid., 1:2.
3. Ibid., 1:3–4.
4. F. Max-Muller, *The Laws of Manu*, 1:8–9.
5. George Smoot, *Wrinkles in Time*, 272.

CHAPTER 11.THE FATE OF THE UNIVERSE

1. Paul Davies, *The Last Three Minutes*, 67–68.

CHAPTER 12. INNER OCTAVES

1. P. D. Ouspensky, *In Search of the Miraculous*, 86.
2. Ibid., 81.

CHAPTER 13. THE HOLOGRAPHIC PRINCIPLE

1. John Blofeld, *Tantric Mysticism of Tibet*, 61–62.
2. P. D. Ouspensky, *In Search of the Miraculous*, 88.
3. Genesis 9:6.
4. *Compton's Interactive Encyclopaedia*, "Orpheus" entry.

CHAPTER 14. QUANTUM PSYCHOLOGY: THE "NONLOCAL" BRAIN

1. Michael Talbot, *The Holographic Universe*, 122.
2. P. D. Ouspensky, *In Search of the Miraculous*, 88.
3. Ibid., 262.
4. Ibid., 265.
5. Ibid., 265–66.
6. Stanislav Grof, *Beyond the Brain*, 91.
7. Colin Wilson, *The Strange Life of P. D. Ouspensky*, 48.
8. Ibid., 48.
9. Paramhansa Yogananda, *Autobiography of a Yogi*, 318.
10. Ibid., 319.

CHAPTER 15. QP2: THE UNIVERSAL PARADIGM

1. Revelations 12:1.
2. P. D. Ouspensky, *In Search of the Miraculous*, 217.
3. Ibid.
4. Paramhansa Yogananda, *Autobiography of a Yogi*, 315.

5. Ibid.
6. W. Evans-Wentz, *The Tibetan Book of the Dead*, 158–59.
7. Ibid.
8. Ibid.
9. Ibid., 95–96.
10. Rodney Collin, *The Theory of Eternal Life*, 37.

CHAPTER 16. THE SHAPESHIFTERS

1. Adrian Recinos, *Popul Vuh, The Sacred Book of the Ancient Quiche Maya*, 168–69.
2. Ibid., 169.
3. Ibid.
4. Graham Hancock, *Fingerprints of the Gods*, 337.
5. Ibid., 333.
6. Mark Lehner, *Secrets of the Lost Empires*, 93.

CHAPTER 17. “AL-CHEM”—THE EGYPTIAN WAY

1. Anon., *Material for Thought*, no. 7, 1.
2. John Romer, *Romer’s Egypt*, 28.
3. Ibid., 65.
4. R. O. Faulkner (trans.), *Ancient Pyramid Texts*, 227.
5. David Furlong, *Keys to the Temple*, 79.
6. CorpusHermeticum, Asclepius III 246 (see under Copenhaver in bibliography).
7. Ecclesiastes 1:9–10.

Bibliography

Anon. *Material for Thought, Excerpts from the Hermetica*. San Francisco: Far West Press, 1977.

Bauval, R., and A. Gilbert. *The Orion Mystery*. London: Heinemann, 1994.

Bible, The. King James version.

Bierhorst, John. *The Mythology of Mexico and Central America*. New York: Morrow, 1990.

Blofeld, John. *Tantric Mysticism of Tibet*. New York: E. P. Dutton, 1970.

Collin, Rodney. *The Theory of Celestial Influence*. London: Robinson & Watkins, 1980.

———. *The Theory of Eternal Life*. Boston: Shambhala, 1984.

Collins, Andrew. *Gods of Eden*. London: Headline, 1998.

Copenhaver, Brian P. *Corpus Hermeticum*. Cambridge: Cambridge University Press, 1992.

Davies, Paul. *The Last Three Minutes*. London: Weidenfeld & Nicolson, 1994.

———. *Other Worlds*. London: Penguin, 1990.

Dawkins, Richard. *The Blind Watchmaker: Why the Evidence of Evolution Reveals a Universe Without Design*. London: Penguin, 1988.

———. *River Out of Eden*. London: Orion, 1995.

———. *The Selfish Gene*. Oxford: Oxford University Press, 1989.

De Santillana, Giorgio, and Hertha von Dechend. *Hamlet's Mill: An Essay Investigating the Origins of Human Knowledge and Its Transmission through Myth*. Boston: David R. Godine Publisher, 1992.

Dunn, Christopher P. *The Giza Power Plant: Technologies of Ancient Egypt*. Rochester, Vt.: Bear & Co., 1998.

Ellis, Ralph, *Thoth, Architect of the Universe*. Dorset: Edfu Books, 1997.

Erman, A. *Pyramid Texts, the Literature of the Ancient Egyptians*. London: A. M. Blackman, 1927.

Evans-Wentz, W. *The Tibetan Book of the Dead*. Oxford: Oxford University Press, 1974.

Faulkner, R. O., trans. *Ancient Pyramid Texts*. Oxford: Oxford University Press, 1969.

Ferris, Timothy. T*he Whole Shebang*. London: Weidenfeld & Nicolson, 1997.
Fix, W. R. *Pyramid Odyssey*. Toronto: J. James, 1978.
Flem-Ath, Rand, and Colin Wilson. *The Atlantis Blueprint*. London: Little Brown, 2000.
Gooch, Stan. *Cities of Dreams*. London: Rider, 1989.
Graves, Robert. *The White Goddess: A Historical Grammar of Poetic Myth*. London: Faber & Faber, 1999.
Grof, Stanislav. *Beyond the Brain*. Albany: State University of New York Press, 1985.
Gurdjieff, G. I. *Beelzebub's Tales to His Grandson*. London: E. P. Dutton, 1964.
Hall, Edward T. *The Dance of Life: The Other Dimension of Time*. New York:Anchor, 1984.
Hancock, Graham. *Fingerprints of the Gods*. London: Heinemann, 1995.
Hapgood, Charles H. *Maps of the Ancient Sea Kings: Evidence of Advanced Civilization in the Ice Age*. London: Souvenir Press, 2001.
Hayes, Michael. *The Infinite Harmony*. London: Weidenfeld & Nicolson, 1994.
Jung, Carl G. *Memories, Dreams, Reflections*. London: Fontana, 1995.
Lehner, Mark. *Secrets of the Lost Empires*. London: BBC, 1996.
Max-Muller, F. *The Laws of Manu*. Delhi: Motilal Banarsidas, 1964.
Moskvitin, Jurij. *Essay on the Origin of Modern Thought*. Athens: Ohio University Press, 1974.
Narby, Jeremy. *The Cosmic Serpent*. London: Weidenfeld & Nicolson, 1998.
Naville, Edouard. "Excavations at Abydos." Smithsonian Institution Annual Report, 1914.
Osbourne, Harold. *Indians of the Andes: Aymaras and Quechuas*. London: Routledge and Kegan Paul, 1952.
Ouspensky, P. D. *A New Model of the Universe*. Mineola, N.Y.: Dover Publications, 1997.
———. *In Search of the Miraculous*. London: Routledge & Kegan Paul, 1976.
Paramhansa Yogananda. *Autobiography of a Yogi*. Los Angeles: Self-Realization Fellowship, 1977.
Recinos, Adrian. *Popul Vuh, the Sacred Book of the Ancient Quiche Maya*. Athens: University of Oklahoma Press, 1991.
Romer, John. *Romer's Egypt*. London: Michael Joseph, 1982.
Satprem Satprem. *Sri Aurobindo, or the Adventure of Consciousness*. New York: Institute for Evolutionary Research, 1984.
Schwaller de Lubicz, R. A. *Sacred Science*. Rochester, Vt.: Inner Traditions, 1988.
Shepherd, Linda Jean. *Lifting the Veil: The Feminine Face of Science*. Boston:

Shambhala, 1993.
Shrieve, James. *The Neanderthal Enigma*. London: Viking, 1996.
Smoot, George. *Wrinkles in Time*. New York: William Morrow, 1994.
Speziali, Pierre, ed. Einstein–Besso Correspondence, 1903–1955. Paris: Hermann, 1972.
Talbot, Michael. *The Holographic Universe*. London: Grafton Books, 1991.
Temple, Robert. *The Sirius Mystery*. London: Century, 1998.
Tompkins, Peter. Secrets of the Great Pyramid. London: Allen Lane, 1971.
VandenBroeck, André. *Al-Kemi: Hermetic, Occult, Political and Private Aspects of R. A. Schwaller de Lubicz*. Herndon, Va.: Lindisfarne Press, 1990.
West, John Anthony. *Serpent in the Sky: High Wisdom of Ancient Egypt*. Wheaton, Ill.: Quest Books, 1993.
Wilson, Colin. *From Atlantis to the Sphinx*. London: Virgin, 1996.
———. *The Strange Life of P. D. Ouspensky*. London: Aquarian Press, 1993.
———. *The War against Sleep*. London: Aquarian Press, 1980.

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Library of Congress Cataloging-in-Publication Data Hayes, Michael, 1949– The hermetic code in DNA : the sacred principles in the ordering of the universe / Michael Hayes.
p. cm.
"Originally published in the United Kingdom in 2004 by Black Spring Press under the title *High Priests, Quantum Genes*."
Includes bibliographical references and index.
Summary: "An examination of the precise code that connects ancient spirituality with modern science"—Provided by publisher.
ISBN: 978-1-59477-218-4
1. DNA. 2. Spirituality. I. Hayes, Michael, 1949– High priests, quantum genes. II. Title.
QP624.H39 2008
572.86—dc22

2008004438

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